The Journal of the American Medical Association

VOL. XXXVI. CHICAGO, ILLINOIS, MARCH 16, 1901. No. 11.

Address.

THE STUDY OF ANATOMY.*

LEWELLYS F. BARKER, M.B. (TOR.)
CHICAGO.

With the advent of October, with its cool and bracing days and restful nights, there is regularly a quickening of activities in academic circles. The occupant of a professorial chair, re-invigorated by temporary sojourn in forest or field, at the seaside or in the hills, resumes his teaching with renewed enthusiasm, and engages again in that original investigation which represents the most absorbing interest of his life. The student, too, perhaps as yet less conscious of the actual need of an occasional remission from his labors, has nevertheless had his holiday, and returns to the college of his choice ready for another season of diligent application, and eager to begin once more the arduous tasks which the pursuit of knowledge entails.

It has long been customary in colleges in which medicine is taught, to call a meeting of the faculty and students at the beginning of the autumn session. Such a meeting permits of the reunion of former teachers and students, and the introduction and welcoming of new teachers and new students. It gives, further, opportunity for the making of certain special remarks; and I have noticed that there is almost universally a tendency on the part of the faculty to grant the privilege of remark-making to some member of it who has lately been added to the staff. Being myself one of the most recent additions to an already large staff-family, the privilege has this year been gracefully allotted to me. However great a sacrifice on the part of my colleagues this may represent, the new-comer, on this occasion, like the distinguished member of the faculty who last year addressed you, considers it a great favor to have the opportunity of expressing the pleasure he has in coming among you and being counted one of you, and to meet with an occasion on which he can, more or less generally, indicate the aims and scope of the science which he represents, and so publicly justify the position which he holds. Fortunately, in this latter respect, the task is an easy one, for anatomy has in medicine long ago won its place as a science essential as a basis for all subsequent medical studies, and, moreover, my predecessors in office have been men of such sterling merit, power and inspiration, that the subject is here appreciated and reverenced. Especially true is this of him who has immediately preceded me as the occupant of the chair, and who has left it in order to accept a chair of surgery; while we commiserate anatomy on losing so able a representative, we must congratulate surgery on the enlistment in its service of so well-trained and enthusiastic an anatomist. He has, at this College, developed, among other things, a course in surgical anatomy—easily one of the best in America—and this part of the anatomic work he has promised, for the present at least, to retain. You join with me I know, in wishing my colleague, Professor Bevan, a continuation of that success which he has already attained in the field of his ultimate choice.

The year in which we live marks an important epoch in the history of the College. Of a whole series of advances, I wish to call attention especially to one. Beginning with this autumn quarter, a closer relationship than has ever existed before between Rush Medical College and the University of Chicago has been established. Not entirely satisfied, for what true lover long is, with that "sisterly" relationship which the term "affiliation" represents the College has this year appointed to two of its fundamental chairs—physiology and anatomy—men who are already occupants of chairs in the same sciences at the University of Chicago. That such closer bond of union can not fail to be of the greatest value, both for Rush Medical College and for the University of Chicago, I confidently believe. That it is only the forerunner of a still deeper intimacy, many I am sure, both in the University and the College, fondly hope.

On thinking over anatomical subjects in the search for material for this address, the ideas which came to me grouped themselves, in the main, under two headings: 1. What does the science of anatomy include? 2. How can the study of anatomy best be prosecuted? Each of these headings corresponds to matter enough for any single occasion; I have therefore decided to spend the time in a consideration of the former of the two questions, and to reserve for another time and place what I have gathered in answer to the latter.

Of the whole group of the natural sciences, there is perhaps no other member, the province of which is less well understood by the general public than is the science of anatomy. As ordinarily thought of by the layman, it is a science, the study of which necessarily precedes the practical work of medicine and surgery; a science which is largely if not wholly descriptive, and one which, to be mastered, requires prolonged occupation, scalpel in hand and pipe in mouth, with dead and partially decomposed human beings. Such a view of the science, though perhaps not surprising when we recall the methods by which anatomy—so-called—has frequently in this and other countries, been prosecuted, could, I do not need to tell you, be scarcely more widely removed from the truth. Anatomy is not simply a descriptive science; the study of it as a preparation for practical medicine and surgery represents only one side of its interest and usefulness; the scalpel is now perhaps the coarsest instrument it employs; its work is by no means confined to the human body alone, much less to the dead human body, and when it does deal with the

* Delivered before the Faculty and Students of Rush Medical College, Oct. 5, 1900.

latter, the material can be so well preserved that even the fragrant Havana is said to be more offensive to some sensitive souls than are the odors from the well-kept preparation room.

Even medical men differ markedly in their conception of what anatomy includes, their ideas being largely based on the kind of anatomy they themselves were taught, and on the anatomic needs of the particular branch of medicine which, after graduation, they have cultivated.

Nor is there uniformity of opinion among the pure anatomists themselves, as can be readily seen by a perusal of the various addresses made by scientific anatomists in different parts of the world during the last twenty years. A free expression of opinion on the subject has, however, gone far to make the aims and scope of the science clearer, until at present its principal representatives are more clearly in accord, with regard to them, than ever before. In what this accordance consists, I can, I believe, make clearest to you by glancing briefly at the various steps through which the science has passed from the period when the earliest anatomic observations were recorded to the present day.

There can be no doubt that from the earliest times, curiosity concerning, and interest in the make-up of the human body has existed. The references to man's body and its organization frequently to be met with in the pages of the old Hindu Vedas and of the earliest writings of all the oriental nations, make this very evident. Nevertheless, the awe in which men stood before the human cadaver, together with the penalties threatened by religious leaders for any molestation of it, appear to have effectually prevented any systematic examinations; and the little knowledge possessed by the ancients, aside from the conclusions drawn from animals killed for food or for sacrifice, seems to have been drawn from the instances in which, through the violence of war, the chase, or the natural elements, the human body became dismembered or eviscerated.

The earliest dissections of the human body of which no doubt exists, are those which were undertaken at the Alexandrian School, by Herophilus and Erasistratus, supported and protected by the intelligent Ptolemaic rulers. The name of Herophilus is still familiar to every beginner of anatomic studies in the term Torcular Herophili. The statement is made, though I hope it is not true, that these daring anatomists went so far, with Ptolemy's sanction, as to dissect living criminals, from which Tertullian designated Herophilus as *lanius*.

This opportunity for the anatomic investigation of the human body appears to have been unique, and it continued only for a short time. Even Galen's studies, the results of which were held, for the following ten centuries at least, to be infallible, were limited to the bodies of animals; he recommended, it may be remembered, the study of the bodies of apes and swine—the animals which in his opinion were nearest to human beings. After Galen, the natural horror which the examination of the dead body excites, together with the edicts of the church against dissection, prevented any further progress of descriptive human anatomy for a very long period. The church declared that Galen had been infallible, and that therefore no further anatomic studies were necessary. Fortunately for science, which knows but little of infallibility, certain of its votaries in high favor at Rome, gained permission in the fourteenth century to make dissections of human bodies, and to use them for demonstration before students. Mondini in Bologna again opened the path for scientific anatomic inquiry, and started in Italy a movement which placed that country, as far as medicine is concerned, in the lead. Students from distant lands were attracted, as they always have been and always will be, to the point where progress was making the greatest headway.

The great Vesalius, often known as the father of anatomy, was among these wandering scientists. Born in Belgium, and educated in France, he prosecuted his anatomic studies in Italy, especially when professor at Padua, to such a degree that he merits a place among the world's greatest reformers. This energetic, truth-seeking, idol-breaking, authority-denying man dared to look at things as he saw them, rather than as Galen had said they should be, and thus made discoveries of the first importance in anatomy; by his artistic powers he rendered many of them imperishable; best of all, he broke forever the tyranny of tradition in anatomic knowledge, and threw wide open the gate by which men must always enter in the pursuit of anatomic truth. Vesalius was a contemporary of Luther; the year of his death is that of the birth of Galileo and of Shakespeare.

It was the spirit which animated Vesalius which later led William Harvey, the founder of physiology, to the discovery of the circulation of the blood, and Giovanni Battista Morgagni, the founder of pathology, to that mode of conception which Virchow has designated "the anatomical idea in medicine." It is the spirit which is embodied in every scientific worker of today who accepts the records of past investigation only as a guide—a guide which must be fallible since it is human—and which, therefore, must be repeatedly controlled; a guide which needs constant revision on account of the ever-increasing extension of the domain of sense, and one which, if not added to significantly by the scientist in his lifetime, will stand as an everlasting witness to his inefficiency, a perpetual testimony to his lack of consequence.

Like all the natural sciences, anatomy in its earlier stages consists of necessity, in the amassing in an empirical way of a store of naked facts. In other words, the subject is purely descriptive until a sufficient number of facts have been collected to make their arrangement and classification worth while. Adequate descriptions are based on intelligent observation which in turn is dependent on the skilful use of the organs of sense, including the means which modern technique is ever inventing to extend them. The body is examined externally and internally in its various parts; it is looked at, it is felt. The size, shape, color, weight, consistence, and reciprocal relations of the parts are noted; the results are recorded, the attempt being made to establish the material content of the science with all possible certainty, sharpness, and clearness. The parts have first to be distinguished and named, then accurately described, their physical characters being established in language. The description of a natural object that shall call up in the mind of the reader a precise image of the object, and that shall serve as a reliable guide to a succeeding observer, does not fall within the province of every man's capacity; happy indeed is the anatomist who possesses the power, for, as has more than once been pointed out, an exact and clear description of the known is often of as great value as the so-called "discovery" in the region of the unknown.

The satisfactory naming of the various parts alone is a task of far greater difficulty than at first appears.

An object must be studied for a long time, in many countries, and by men who know the relations of anatomy to every subject with which that science is allied, before a name for a part which shall be in accord with all the requirements can be decided on. Almost every part has at various times received a series of names; periodic revisions of nomenclature by representative committees are accordingly desirable in order to arrive at uniformity among anatomists and to relieve the science of an immense number of names, since at best it must be grieviously burdened.

Ever since the time of Vesalius there has been an unbroken series of anatomic observers who have devoted their powers to the attaining of skill in dissection and anatomic description; with energy and endurance and often at great personal sacrifice, this band of anatomists has developed this side of our science until it has reached the degree of precision which characterizes it to-day; a state, indeed, which many believe to be practically complete and incapable of further progress. Of the difficulties overcome by Americans in helping with this work since Mr. Giles Firman made the "first anatomy in the country," a good idea can be gained from the admirable historical review that we owe to E. M. Hartwell. While it is obvious that there must be a temporal limit to the discoveries which the naked eye is to make in anatomic fields, one has nevertheless only to refer to the current journals to see that the limit has not yet been reached. But the limits of progress in anatomic description will by no means be synchronous with those of macroscopic discovery of the objects themselves; indeed, considering the complexity of man's architecture and the different and ever-varying view-points whence descriptions are being written, it is scarcely conceivable that man will ever attain to descriptions which will be satisfactorily final. To the surgeon, to the artist, to the physiologist, to the scientific anatomist the details of parts are of utterly different significance; the varying scale of anatomic values requires in each case a special description; an objective characterization of all details, merely as such, would make anatomic descriptions so ponderous and chaotic as to render them totally useless to anybody. Nor can illustrations, in colors and otherwise, which are perhaps even more valuable than anatomic descriptions, ever be completely objective. The exact plates of anatomic objects which approach of late years ever nearer to that degree of accuracy which will permit of the taking from them of mathematical measurements, never attain actually to perfection; there must always be an element of subjectivity in them which may be inconsonant with the needs of some other observer at some other time.

Again, the greater or less degree of variability to which all parts of the animal body are subject makes it difficult for anatomists to agree as to what shall be called normal, and thus the same object has frequently to be described in several different ways, and pictorially multiply exactly represented. There thus remains, and ever will remain, a task for the anatomist in the domain of anatomic description and illustration (Cf. His, W.).

If it be true that in the fields just referred to there is still much work to be done, the statement is all the more justified with regard to the taking of measurements and weights of the body and its parts. The shape of the natural objects is nearly always such that the localization of fixed points whence measurements can be taken is rendered very difficult—so difficult that frequently the comparison of the measurements of one observer of an object with those of another observer of the same are useless. Again, owing to the variability of the bodily dimensions in the two sexes, in different races, at the various ages of life, according to individuality or under different physiologic conditions, unless a whole series of data accompanies a given measurement, the result may be of no value to a succeeding observer. In modern anthropology, however, definite criteria are always attended to, and the measuring method is proving to be of the highest service in the elucidation of the questions which that science has to solve.

The difficulties of anatomic measurement in large part obtain also when the weighing of anatomic objects is undertaken. Notable results have already been obtained, however, not the least of those in connection with the central nervous system being gained through the comparatively recent work of my colleague, H. H. Donaldson, in the University of Chicago. The application of the method to the determination of the normal by H. Thoma may also be referred to as the beginning of a long series of investigations which, in the end, can scarcely fail to be of the greatest importance. As His, who has discussed this and the foregoing subjects in an admirable manner, points out, it is difficult to imagine how the study of variations in constitution is to be approached unless this and similar methods are the ones employed. As he says, it must be of decisive influence for the physiologic capability of an individual, whether in his organism the musculature predominates over his nervous system, his epithelial tissues or his glandular organs, whether his heart is relatively large or small, whether accordingly it can increase the average blood-pressure in the arteries to a great or to a slight degree, whether the man has a large or small liver, or whether he has a long or short alimentary canal. The study of anatomy with the unaided sense organs is, as we have seen, one of no small magnitude, and one not yet complete. What then is to be said of that descriptive anatomy which invades the territory into which the eye, only with the aid of the microscope, can penetrate. The field of the microscopic anatomist is at least a thousand times wider than that of the macroscopic worker, and in that field what has been said above concerning description, pictorial representation and anatomic measurement equally holds good. It will yet be long ere the collection of microscopic data will have been completed. New methods open up new problems, and at present progress, descriptive microscopic anatomy may probably occupy workers for centuries to come. Even with the methods and microscopes now at our disposal we have entered a museum the largest part of which has yet to be catalogued, and who can say what new doors the methods and the microscopes of the century just before us are about to open up. The science of histography is almost as undeveloped as was geography before the voyage of Columbus. Between the histographic world of to-day and the architectural world of stereochemistry who will dare to prophesy what rich territories may exist?

The mere observation and registration of naked facts does not, however, satisfy for long the cravings of the investigating human intelligence. Indeed, there is something of a blunting character about the process if long continued without the synchronous operation of other faculties of the intellect. Man is a classifying and generalizing animal; there lies deep in his nature a desire to arrange the facts he observes in an orderly manner, with the object of understanding them. It is in the attempt to satisfy this human tendency that

anatomy, instead of remaining a purely descriptive science, becomes elevated to a plane on a level with the other inductive sciences.

Evidences of attempts at anatomic classification are found among the earliest anatomists. The close resemblance of certain parts to one another soon gave rise to the idea of organic systems—such as the muscular and nervous systems. The keen observations of Aristotle on the partes similares and the partes dissimilares may be recalled, as well as those of Fallopius, outlined in his "Tractatus quinque de partibus similaribus." It was left to the organizing brain of the young Frenchman, F. Xavier Bichat, to get a grasp, for the first time, of the relation of elementary tissues to the general architecture of the body. Although, through over-work and impecuniosity, his penetrating eyes were forever closed at the early age of about 31 years, Bichat left behind him three treatises—his "Traité des membranes," his "Récherches physiologiques sur la vie et la mort," and his "Anatomie générale"—a legacy so valuable that we can not help lamenting, with wondering regret, the too early arrest of his labors. He recognized the fact that whereas in chemistry the more complex bodies are composed of simple elements, so in the architecture of man's body simple tissues are variously combined to form the complex mixture of tissues which are ordinarily known as organs. He distinguished some twenty-one systems or tissues—the cellular, the osseous, the fibrous, the cartilaginous, the nervous, the muscular, the medullary, etc.—basing his classification on the manner in which each tissue behaves in the presence of various reagents, the physical and vital properties of each, and, finally, the character of each when met with under diseased conditions. In other words, Bichat was the founder of the modern science of histology, or, as it is sometimes designated, general anatomy.[1]

Before following the progress of anatomy further along this line, a word must be said concerning what must be regarded perhaps as the first direction taken by the investigating mind toward the understanding of organic forms, namely, the physiologic—in its first stages, the purely teleological.

As has long since been pointed out, the language of anatomy is sufficient evidence of the long existence of the teleological conception of this science. For thousands of years the individual parts of the body have been known as "organs," and the processes going on in them as "functions." Just as function was unthinkable without a corresponding organ, so an organ without function was inconceivable, and thus, wherever in the series of well-understood parts of the body one remains over whose purposeful participation in the processes of life is not understood, toward this is directed over and over again the mental acumen of the investigator to assign to the reluctant organ a definite significance.[2] It is not my purpose here to enter into a discussion of teleology. The world has been widely enough explored to utterly dispose of that gross anthropomorphic form of teleology which pointed to a humanly scheming architect of the universe, and whether or not we accept some more correct form of teleology is, at present, a matter for individual opinion. This much is certain, that while no teleological view of Nature actually explains the organization of a human body, the teleological conception has been particularly heuristic in its effects in the investigation of the relation between the physical processes in, and the physical characters of, the various parts of the body. Ever since Galen, though animated by a false teleology, wrote his "De usu partium," in which the size, position, number, consistence and structure of the various parts are treated as facts which can be understood only through the investigation of the purposes which they subserve, this mode of consideration has been among the most influential. Even to-day a large part of the profitable research undertaken by anatomists, physiologists and pathologists has for its aim the elucidation of the relation of structure to function, especially in microscopic domains. The work done in Ludwig's laboratory was largely of this nature, and as recently as 1883 H. v. Meyer[3] has asserted that the only possible way of understanding the organs is to proceed to the study of them from the physiologic viewpoint. But if this were true, then all scientific anatomy would be physiology, a statement which narrow-minded physiologists might applaud, but which broader men know to be untrue. Physiology is one of the daughters of anatomy, and is not likely so soon to forget the fifth commandment. Johannes Müller was the last great scientist who covered both fields of anatomy and physiology; since his time investigators have cultivated one of the two at the expense of the other, a division of labor which we must recognize on the whole as beneficial, though that it is accompanied by certain drawbacks must also be confessed. Especially difficult is it to sharply separate the study of structure from that of function in the science of cytology, founded by Schleiden and Schwann, pupils of Johannes Müller in the fourth decade of this century. The development of the cell-doctrine, modified as it was somewhat later by the introduction of the protoplasm theory by Max Schultze, marks a most important epoch in the history of both anatomy and physiology. Its value for the more practical side of medicine is sufficiently in evidence when one of its direct outgrowths, the cellular pathology of Rudolph Virchow, is recalled. The appalling elaboration of technical methods during the last few years has led to the accumulation of cytographic data which remove all the comfort we once had in looking on the cells as elementary structures. Though cytophysiology is as yet far behind cytography in its state of development, there no longer remains any doubt that in approaching the cell we stand before an organism of enormous complexity of constitution, endowed with functional activities which must for long remain to us unfathomable. Any one who has worked much with protoplasm and nucleus, with archiplasm and centrosome, with cell-fibrils and cell-granules under various physiological conditions, can not fail to appreciate the fact that here only the threshold of inquiry has been crossed—the exploration of the real nature of the cell only just begun. Indeed, the evidence is fast accumulating in favor of the opinion that many of these morphological cell-constituents represent precipitates due to the action of reagents, and the laws governing their regular appearance under definite conditions are being investigated. It is exactly in these studies that structural and functional investigation still do well to go hand in hand, a fact which a survey of the cytological hand-books, now becoming so numerous, will show, is meeting with general recognition. I believe it was Du Bois Reymond who ventured the statement that "an ocean steamer, with all its machinery and intricacies of construction,

1. Duval, M.: L'anatomie générale et son histoire; Rev. scient., Paris, 1886, xxxvii, 65; 107.

2. His, W.: Ueber die Bedeutung der Entwickelungsgeschichte fuer die Auffassung der Organischen Natur, Leipzig, 1870.

3. Von Meyer, H.: Stellung und Aufgabe der Anatomie in der Gegenwart; Biol. Centralbl., 1883, No. 12.

is far less complicated in its composition than a cell." Would that the cell were no more complicated than the ocean steamer in construction!—the modern investigator would then soon be ready with the solution of its problems. Alas, the difficulties are not confined to the study of these organisms as individuals; already we have entered on the investigation of their social relations, and cell-altruism and cell-egoism, cell-states and revolutionary cells are discussed as actively among cytologists as are the similar social questions concerning organic individuals of another order by the people at large. Further, in cytophysics and cytochemistry, research is at present most active—these subjects representing one of the most interesting subdivisions of recent physiology. Should the gulf between the present microscope picture of the cell and its chemical structure ever be bridged, stereochemistry would enter into the domain of anatomy. So much in general with regard to the physiologic view-point in anatomy!

Closely allied to the foregoing, and in reality an offshoot from it, is the mode of consideration of the surgical and topographical anatomist. In this branch the individual regions and cavities of the body are dealt with with regard to the reciprocal position of the various organs and systems. Surgical anatomy studies these relations only in as far as they are of importance in operative procedures; topographical anatomy, a wider subject, studies the relations mentioned independently of their significance to the surgeon. The various regions of the body are studied sometimes in layers, sometimes with regard to serial clues to a particular structure. Sections of frozen cadavers have here proved to be of great value for the study of relations and for helping the student to make mental reconstructions of the parts analyzed by dissection. Surgical and topographical anatomy are thus seen to be subjects of very high practical importance—the former especially for the surgeon, the latter also for the worker in internal medicine. It is this kind of anatomy which has been brought to so high a state of cultivation in Great Britain, and especially in London, where most of the anatomy has been taught by men in surgical practice. Valuable as such instruction is for surgery and medicine, it should not be forgotten that it is applied anatomy rather than anatomy proper, and no less a scientist than Macalister has deplored the lack of advances in anatomy in England, attributing it largely to the one-sided mode of instruction in vogue, and to the examinations, to the passing of which the teaching is, in large part, directed. Surely certain morphological considerations are as important for the student of anatomy as the learning by heart of the various relations of an artery, especially if the student is not to become a surgeon; it would be melancholy indeed if there were not at least some members of the anatomic classes who regarded the study of the architecture of the brain and spinal cord as interesting and as important as that of the perineum.

But anatomy as a science would never have attained to the dignified position it now holds had the minds engaged with it remained satisfied, after observing and registering its material content, with attempting the explanation of the human body from the physiologic view-point or with exhausting the possibilities of its relation to the surgeon's knife.

As in the other natural sciences, the causality-need of the intelligence has forced the anatomist to undertake the investigation of the origin of the organic forms which he studies, and of the relations of these forms to other similar and dissimilar organic forms accessible to examination. In other words, the comparative and the genetic methods of study have been resorted to. Comparative anatomy and embryology together constitute morphology, at least in the sense in which the term is ordinarily used, and in morphology we recognize the part of anatomy which makes it truly worthy of being designated a science.

In the application of the comparative method, not only are the different parts of the human body compared with one another—the arms with the legs, the brain with the spinal cord, the skull with the vertebral column, the various segments and segmental partitions with one another, but man, recognized as a member of a long series of animals, is compared with each of them in turn, and they with one another, with the object of establishing groups of type forms and of learning the plan of architecture, not only of the single creature, but also of the whole series. At first, anatomists studied the forms which to them seemed to resemble man most closely, but the gradual transition from one form to another was so striking that animal after animal was studied until, finally, the whole world of organisms has been submitted to the examination of the comparative investigator. Oken and Goethe, Cuvier, Meckel, Geoffroy St. Hilaire, Lamarck, Wallace, Darwin, Haeckel, Huxley, Gegenbaur and Leidy are names which have become very familiar to us in this field. The world of living creatures is a unitary system, of which man is an inseparable portion. First, when the whole system has been worked through do the form and significance of many of man's parts become intelligible. The animal series can be thought of as a tree with the simplest forms at the root, the trunk branching at its origin, each branch in turn subdividing into limbs and twigs until the highest degree of differentiation is reached. It is this recognition of the lawful relation of organisms to one another which the study of comparative anatomy has afforded us. Such a recognition, now general, was little less than startling to those who first arrived at it. That it pointed to some more general law, was obvious. As Goethe, himself no mean participator in comparative studies, beautifully expressed it:

> Alle Gestalten sind ähnlich und keine gleichet der anderen,
> Und so deutet das Chor auf ein geheimes Gesetz.

Has this secret law been discovered? Many believe so, and look upon Darwin's doctrine of descent as a generalization worthy, on account of its scientific value, of being placed side by side with Newton's theory of gravitation. Whether the evolutionary doctrine be unequivocally accepted or not, certain it is that the relationship of forms which comparative anatomy reveals finds in this genealogic conception of Darwin a more satisfactory explanation than any other hitherto offered.

Closely allied to the phylogenetic mode of consideration is that which we designate as the embryologic, ontogenetic or developmental. In the human species, as in every other, the life of the individual member is of short duration; each human organism has a beginning, a period of growth and development, followed, even in the life of maximum length, in the course of a few decades by decline and death. Generation follows generation as wave follows wave on the surface of a ruffled sea. In the transference of life from one generation to another the material substratum sinks to a minimal amount—the new human being begins as a fertilized egg-cell 1/120 of an inch in diameter, weighing only a minute fraction of a gram. From this simplest of beginnings it gradually passes through a long series of developmental stages, the character of these stages varying somewhat under

environmental influences, each stage being the necessary consequent of a preceding one, and at the same time the necessary antecedent of the stage which follows it, until, finally, the organism attains to the fulness of differentiation of which, under the circumstances of its environment, it is capable.

In this long series of developmental stages, which every mammal passes through, the earliest are very, very simple and correspond in form closely with the lower forms in the animal kingdom. But as cell-division in the embryo proceeds, the shaping of the organism becomes more complex, resembling higher and higher forms of animal life, until, finally, that of mammals is assumed. Even at this period the unskilled observer might easily be confused if he were required at a glance to distinguish a human embryo from those of several other mammals at a similar period of development. Ultimately, the differential characters of the species become clearly marked, and even the tyro can easily recognize them. The more skilled the observer, however, the earlier in the development will the species-criteria be decisive.

Comparative embryology becomes all the more astonishing a study when we realize that the embryologic history of every higher animal is, for a long period at least, almost identical with that of a whole series of allied forms. No wonder then, this state of things being acknowledged, that the embryologists, like the comparative anatomists, have pictured the genetic relations of the different animal forms also as a tree, a tree which on close examination is found to accord very closely with the tree of relationship constructed by the comparative anatomists.

Comparative anatomy and embryology are therefore closely interwoven subjects, and each may, in a way, be looked upon as a control for the other, though each has its special problems, and each sets about the solution of these in a manner peculiar to itself. Take, for example, the attempts at an explanation of the series of forms through which the individual passes in its development. Many comparative anatomists, accepting Darwin's doctrine of the origin of the species through a struggle for existence among generations influenced by heredity and variation, would explain the development of the individual member of a species as a temporarily compressed recapitulation of the developmental course of the species as a whole. While this doctrine that "ontogeny repeats phylogeny" has been maintained by eminent scientists, there are others who are unwilling to accept what can not be proved; and some of the embryologists especially feel it their province to attempt to explain from embryologic studies alone, and without reference to phylogenetic history, the origin of the various form-stages through which the individual passes. Already great strides have been made in the direction mentioned, especially through the investigation of the laws of growth, and the field of developmental mechanics, though so lately entered upon, has proven to be one of the most fruitful of those thus far tilled. One of the foremost investigators along these lines goes so far as to assert that the growth of every organic germ must, as a process strictly regulated according to time and space, possess a mathematical expression in which the velocity of growth of each point is determined in its dependence on the time and the position. Whether such formulæ will ever be set up, and the kingdom of organic forms thus subordinated to the domination of simple numbers, seems doubtful, but in any case the conception is an interesting one. We need not, however, look into the nebulous distance for the advantages to accrue from developmental study. Near at hand are thousands of facts of the greatest importance for anatomy as a whole, and for the practical branches of medicine and surgery to be gained only through this method of study. There is scarcely a part of the body but what is now better understood than was otherwise possible. I need only mention the remarkably complicated morphology of the brain and sense organs, the distribution of the intestines, the grouping of the various voluntary muscles, the puzzling course followed by certain of the nerves and the origin of the reproductive organs in the two sexes, to call to mind some of the features which embryology has done much to illuminate.

I dare not pass by unnoticed here two phases of investigation which naturally follow upon the others, but which have only very recently begun to be extensively cultivated, viz.: those of histogenesis and comparative histology. Histogenesis stands in the same relation to comparative histology as does embryology to comparative anatomy. Indeed, the anatomist is simply pushing the microscope into embryology and comparative anatomy, and the progress made is, in a way, comparable to the advance from gross descriptive to microscopic anatomy. By histogenesis we mean the study of the development of the individual tissues, including that of the individual cells—cytogenesis. By comparative histology and cytology we refer to the comparative microscopic study of the various tissues and cells through a series of animals. The light thrown by these methods on many of the unsolved problems of structure is unexpectedly brilliant, and the future has much to hope from them; Macallum, too, has shown how important these methods can be in helping to explain certain pathologic phenomena met with in heart muscle, and there can be little doubt but that we are on the brink of the discovery of a series of relations between histogenetic conditions and pathologic processes.

Lastly, as a crowning piece to the whole system of anatomic study, experimental morphology must be recognized. As but a child among the kindred sciences, it is of robust constitution, being the offspring of vigorous parents, and, in this country especially, in an environment most suitable for its healthy growth. The anatomist is no longer confined to the study of adult forms, or of forms in their natural mode of development; he can now, to a certain extent, artificially control form-production by resorting to the experimental method. The experiments which have been made upon heteromorphism, upon the artificial production of malformations, and upon the grafting of embryos, are full of interest, so much so as to disturb the equanimity of the soberest of scientists. During the last year or two we have been—I was about to say—shocked by the bringing of the proof by my colleague, Professor Loeb, that the eggs of several species not naturally parthogenetic can be fertilized, or at any rate brought to development, in the absence of spermatozoa, solely through the action of simple physiochemical influences. With miracles such as these already performed, we can but stand in awe of the work of the future.

Most sketchily and imperfectly, I fear, I have tried to give you an idea of what the study of anatomy includes, viz.: descriptive or systematic anatomy—gross and microscopic—physiological, surgical and topographical anatomy; histology or general anatomy, including histography and cytology, comparative anatomy; embryology; comparative histology and embryology; histogenesis, and, lastly, experimental morphology. Assuredly the

subject is wide. It is, I am sorry to say, too wide to be mastered in all its details even when a whole life-time is devoted exclusively to it. The scientific anatomist, after familiarizing himself with the main facts and principles of its various subdivisions, does best, in agreement with the great law of division of labor, to direct his efforts toward the acquisition and promulgation of knowledge, in some one portion of it.

BIBLIOGRAPHY.

In the preparation of this address, I have made free use of a large number of addresses made on similar occasions by other anatomists. I have had no hesitation in borrowing liberally, as will be immediately apparent to those who are familiar with the bibliography. Especially useful to me have been the addresses and papers of His, Hertwig, v. Kölliker, Macalister, Mall, and Waldeyer. The following are some of the sources consulted:

Baker, F.: The rational method of teaching anatomy; Med. Record, N. Y., 1884, xxv, 421-425.

Bevan, A. D.: What ground should be covered in the anatomical course in American medical colleges, and what part of this ground should be covered in the first year? What in the second year? Proc. Assn. Am. Anat., Wash., 1894, vi, 47-49.

Brown, J. M.: The science of human anatomy; its history and development; Edinb. Med. Jour., 1884-5, xxx, 585-596.

Browning, W. W.: Remarks on the teaching of practical anatomy; Brooklyn Med. Jour., 1894, viii, 329-341.

Budge, J.: Die Aufgaben der Anatomischen Wissenschaft; Deutsche Rev., 1882.

Cleland, J.: Lecture on Anatomy as a Science and in Relation to Medical Study; Lancet, London, 1892, ii, 928, 982.

Cooke, T.: The Teaching of Anatomy; Its Aims and Methods; Ibid., 1893, ii, 1153, 1350.

Cunningham, D. J.: Bologna; the Part which it has Played in the History of Anatomy; Its Octocentenary Celebration; Dublin Jour. Med. Sci., 1888, 3, s., lxxxvi, 465-484.

Debierre, C.: L'Anatomie, son passé, son importance et son rôle dans les sciences biologiques; Rev. Scient., Paris, 1888, 3 s., xv, 68-74.

Duval, M.: L'anatomie générale et son histoire; Ibid., 1886, xxxvii, 65-107.

Dwight, T.: The Scope and the Teaching of Human Anatomy; Boston Med. and Surg. Jour., 1890, cxxiii, 337-340; also, Methods of Teaching Anatomy at the Harvard Medical School, especially Corrosion Preparations; Ibid., 1891, cxxiv, 475-477.

Flower, W. H.: An Address Delivered at the Opening of the Section of Anatomy; Tr. Internat. Med. Cong., London, 1881, i, 133-144.

Gegenbaur, C.: Ontogenie und Anatomie in ihren Wechselbeziehungen betrachtet; Morphol. Jahrb., Leipzig, 1899, xv, 1-9.

Hertwig, O.: Der anatomische Unterricht; Jena, 1881.

Hartwell, E. M.: The Study of Human Anatomy, Historically and Legally Considered; Johns Hopkins Univ. Stud. Biol. Lab., Balt., 1881-2, ii, 65-116.

His, W.: Ueber die Bedeutung der Entwickelungsgeschichte für die Auffassung der organischen Natur; Leipzig, 1870. Ueber die Aufgaben und Zielpunkte der wissenschaftlichen Anatomie; Leipzig, 1872.

Humphrey, G. M.: An Address on the Study of Human Anatomy; British Med. Jour., London, 1887, i, 1030.

Von Kölliker, A.: Die Aufgaben der anatomischen Institute: Würzburg, 1884.

Krause, W.: Die Methode in der Anatomie; Internat. Monatschr. f. Anat. u. Histol., Berlin, 1884, i.

Keiller, W.: The Teaching of Anatomy; N. Y. Med. Jour., 1894, lx, 289, 513, 545.

Keen, W. W.: A Sketch of the Early History of Practical Anatomy; Phila., 1870.

Macalister, A.: Introductory Lecture on the Province of Anatomy; British Med. Jour., London, 1883, ii., 808-811.

Mall, F. P.: The Anatomical Course and Laboratory in the Johns Hopkins Medical School.

Von Meyer, H.: Stellung und Aufgabe der Anatomie in der Gegenwart. Biol. Centralbl., 1883.

Marks, G. H.: The Study of Anatomy; Its Position in Medical Education in England and in America; Boston Med. and Surg. Jour., 1885, cxiii, 104-107.

Pepper, W.: Introductory Remarks at the Opening of the Wistar Institute of Anatomy and Biology; Univ. Med. Mag., Phila., 1893-4, vi, 569-572.

Robinson, B.: A Plea for the More Thorough Study of Visceral Anatomy; Gaillard's Med. Jour., N. Y., 1894, lix, 289-296.

Schiefferdecker, P.: Der anatomische Unterricht: Deutsche Med. Woch., Berlin, 1882, viii, 465-467.

Shiels, G. F.: A Plea for the Proper Teaching of Anatomy; THE JOURNAL, Chicago, 1894, xxiii, 110-112.

Testut: Qu'est-ce que l'homme pour un anatomiste? Revue Scient., Paris, 1887, 3, s., xiii, 65-77.

Morris, H.: An Address on the Study of Anatomy; British Med. Jour., London, 1895, ii, 1337.

Turner, W.: Address at the Opening of the Anatomical Department in the New Buildings of the University of Edinburgh: Lancet, London, 1880, ii, 724, 759.

Virchow, R.: Morgagni und der anatomische Gedanke; Berlin. Klin. Woch., 1894, xxi, 345-350.

Walton, G. L.: The Study of Anatomy in the Leipzig University; Boston Med. and Surg. Jour., 1882, cvi, 389.

Waldeyer, W.: Wie soll man Anatomie lehren und lernen: Berlin, 1884.

Original Articles.

PARESIS OF THE EXTERNAL RECTI ASSOCIATED WITH IRREGULAR TABES.*

G. ORAM RING, A.M., M.D.

PHILADELPHIA.

The multiform clinical manifestations which constitute the symptom grouping of so-called locomotor ataxia, are believed by most modern pathologists to be caused by an atrophy or degeneration of the sensory neurons, followed by sclerosis; although as suggested by Berger, Gowers, Oliver and others, this condition is probably preceded by a low grade inflammation.

The varying symptoms, besides those caused by disease of the spinal cord, consist of disturbances of the function of special cerebral nerves, sometimes of the cerebrum and occasionally of the cerebellum.

The medulla oblongata seems to be the connecting link between the spinal and the optic nerve affection. A broad generalization of the ocular symptomatology has recently been presented in a paper by Dr. Charles A. Oliver, as the outcome of a most painstaking series of investigations based upon the study of 100 cases.

The long-recognized pre-ataxic and ataxic divisions, it is thought, should give way to the more scientific initiative or probably inflammatory stage, and later to a degenerative one.

The ocular manifestations, summarized by Swanzy, and previously very thoroughly expounded in the exhaustive treatise of Berger, are as follows: 1, atrophy of the optic nerve; 2, paralysis and ataxia of the orbital muscles; 3, pupilary alterations; 4, paralysis of accommodation; 5, narrowing of the palpebral fissure; 6, imperfect closure of the lids, associated with twitchings in the orbicularis palpebrarum; 7, epiphora; 8, reduction of intra-ocular tension.

It is to the consideration of the second division of symptoms that I will specially call attention.

Paralysis of the ocular muscles occurs in from 20 to 25 per cent. of tabetic cases. They are usually found in the pre-ataxic or inflammatory stage, and not infrequently exist as an initial symptom. Indeed, according to Gowers, in four-fifths of the cases, the paresis constituted an initial symptom. Schmeichler concludes that paresis begins, if it develops at all, with the first symptoms of tabes; at times precedes these by many years, occasionally appears suddenly, but the progress as a rule is a gradual one. After lasting for a few weeks or a few months, it may disappear, not to trouble the patient again perhaps for several years.

The two types of involvement are: the transient paralysis or paresis of a few days or weeks, and the permanent paralysis of one or more muscles. Oscillatory twitching—mostly in a horizontal direction—was first observed by Friedreich, who applied to it the term nystagmus, and thought it an ataxia of the muscles, but since this patronymic is given by ophthalmologists to those clonic spasms of the muscle which appear, even when the patient is looking directly forward, it is clear

* Presented to the Section on Ophthalmology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

why they do not mention it or say merely, as did Mauthner, that it is supposed to occur. As to the order of involvement of the muscles, Swanzy notes the externus as the one most affected, next the oculomotor, and next, probably, the levator palpebræ. Woinow and Berger also give the externus the first place, while Erb and Charcot assign it to the oculomotor. In Javal's experience, the levator was most frequently involved and, succeeding this, the internal rectus, the externus and superior oblique being very rarely diseased. Landolt, de Watteville and Von Graefe are in entire accord with Javal in this judgment, and oppose Berger in his statement that paralysis of the internus is comparatively infrequent.

In the paretic or paralytic condition, the symptom of special annoyance is the diplopia. The cause of the paresis has been regarded as a vascular disturbance or a slight ependymitis in the nuclear region. It sometimes develops into a chronic ependymitis, with granular hyperplasia. They begin, says Pierret, as nuclear, extend toward the periphery, as descending neuritis, and here continue after the nuclear affection has disappeared.

Dejerine's examinations proved that not all ocular paralyses in tabes are of nuclear origin. The muscle involvement is seldom complete, and is limited usually to one eye. The complete and permanent paralysis of an isolated orbital muscle, occasionally noted in locomotor ataxia, is probably due, according to Swanzy, to a peripheral, rather than to a nuclear disease, but occasionally a well-marked muscular paralysis, affecting a number of muscles, occurs.

It is not possible to diagnose locomotor ataxia with certainty in a patient who shows only ocular symptoms, the diagnosis between this disease and insular sclerosis remaining doubtful until general symptoms develop.

The eye muscles paralyzed in tabes have in themselves nothing absolutely characteristic. The paralysis develops rapidly and usually disappears slowly. In cases of tabes that succeed syphilis, the lesion is not syphilitic in histologic character. In this sort of case, as well as in the type in which syphilis can be excluded, the disease is a degenerative one and rarely influenced by antisyphilitic treatment. It is to be regarded as a degenerative sequel of syphilis, rather than a true syphilitic disease. This view is in accord with the experience of Dr. Mills.

The case which has formed the basis of my brief study of paresis of the external recti, as symptomatic of irregular tabes, has been under observation since Feb. 13, 1897. The period during which organic symptoms of the spinal segments, or more properly, segments of the cerebrospinal system, have been carefully noted, has been two years, the only ocular manifestation having been recurring attacks of paresis of the left external rectus muscle.

The patient is a male, aged 30, with an unusually fine mental equipment, and at his initial visit was in perfect condition physically; married, with one (healthy) child. His mother, at an advanced age, has very severe asthma. The family history is otherwise good and, as bearing on his present condition, negative. At the period of his initial visit vision was reduced to 4/200 in each eye, refraction highly myopic and astigmatic, with huge characteristic crescents, the astigmatism being against the rule. There was no muscular abnormality, excepting an exophoria of .5 degree. With the appropriate correction, the vision equaled 20/25 in each eye.

Fifteen months later—May, 1898—the patient again reported, complaining of numbness of the lips, particularly the upper, with anesthesia of the roof of the mouth, some aching in and over the left eye, apparently more aggravated during periods of constipation, but no paresis of any external eye muscles or other distinctive eye symptoms. There was left hyperphoria of 2 degrees. Four days later the same vertical error and, in addition, an insufficiency of 10 degrees of the externi-esophoria. Three days later the esophoria had increased to 16 degrees, and double images had become almost constant, but distinctly more marked at the close of a busy day, as was also the anesthesia of the roof of the mouth.

Pupilary study, beyond the slightest sluggishness, showed no abnormality. The right knee reflex was slightly diminished, also the left. There was entire absence of any hemorrhage or splotches in the eye ground, and the form field—beyond a slight outer contraction—was normal.

Inclined, at this early period, to regard the case as probably specific in origin, I had a consultation with his family physician and friend, Dr. Louis Jurist, who remembered having treated him for a skin rash some years previously, which he regarded as specific. The patient stoutly denied the existence of any such condition, and no other symptoms, primary or secondary, were present. At my suggestion he was placed on mercurial inunctions, followed by iodids. At the end of about two months the diplopia had disappeared, but the remaining symptoms were about *in statu quo;* the treatment was demoralizing his stomach and intestinal tract, his appetite was very poor and the general languor was pronounced. The diplopia had disappeared, but, as I now believe, entirely independent of the treatment.

In September, 1898, there was an esophoria of 10 degrees. In November, 1898, diplopia was again in evidence for a few days, although general symptoms were better, knee-jerks both active, the upper lip moderately anesthetic, the hard palate more sensitive. The potassium iodid was discontinued and salol and bichlorid substituted. The patient now required a prism of 20 degrees, and one week later, a prism of 26 degrees.

Codein, strychnin and quinin were ordered by his general physician, Dr. Jurist. Tabes now seemed to offer the best explanation of the symptomatology. At his visits late in December, 1898, a slight defect in articulation was noted, with some recent shooting pains in the limbs, although these had not been frequent nor of great intensity.

A consultation with Dr. Mills was held early in January, 1899: in addition to the symptoms enumerated above, he examined for the tendon and muscle phenomena in the lower extremities, and found that the knee-jerks were present but slightly sluggish. The tendo-Achillis jerk was, however, absent on both sides. He had not then developed ataxia. The diagnosis of tabes was made, although his knee-jerks were retained, chiefly because the total syndrome could only be explained on this theory. The absent tendo Achillis jerk made Dr. Mills feel that this case was one in which the sacral cord had suffered more than the lumbar segments. From the diagnostic standpoint, the most important cases of tabes are those in which one or more of the well known symptoms like ataxia, lost knee-jerk, or lancinating pains are absent for a shorter or longer time. An important point to bear in mind, in a case like the one under discussion, is the possible development of general paretic symptoms later in the history of the case.

Dr. Mills prescribed iodid and hypophosphites. There was some improvement and exacerbation until May, 1899, when the diplopia was again very marked. This time he was placed on iodid of lithium and chlorid of gold and sodium. Because of disturbed digestion, the iodid had to be stopped, and the gold and sodium retained with a gratifying improvement in the diplopia, the esophoria in June being reduced to 6 degrees at 6 m.

In July, 1899, he was able to use his bicycle with comfort, his appetite was improved, he gained 10 pounds, and there was no doubling unless tired at night—esophoria, 5 degrees.

In the early fall, diplopia was again in evidence, convergence became very marked, anesthesia and numbness of the lips and palate increased, with a number of laryngeal crises, and a further study of the deep reflexes of the lower extremities, ankle and foot showed their entire absence.

A rest in the South for three months resulted in a further removal of the diplopia, and the general condition, up to the past February, remained unchanged.

In March the patient sailed for a year's trip abroad. He was desperately seasick while crossing, and wrote me from Heidelberg that the diplopia had again recurred.

The following points are especially noteworthy in connection with the study of the case I have cited: 1. In a period of two years, absolutely the only ocular manifestation was a series of paretic attacks of the left

external rectus muscle, the duration of the paresis varying from a few weeks to about three months. 2. The retention, during almost the entire period of observation, of the knee-jerks. 3. The existence of various foci of degeneration, as especially illustrated in the comparatively early involvement of the sacral cord and the consequent loss of the deep reflexes of the lower extremities; the paretic ocular muscle, the numbness, the laryngeal crises. 4. Although a specific history was thought to be present, the antisyphilitic treatment was quite nugatory or possibly damaging, for the reason previously stated. 5. The therapy, aside from the stomach and intestinal requirements, that gave the best, although but palliative result, was chlorid of gold and sodium.

DISCUSSION.

DR. S. D. RISLEY, Philadelphia—Dr. Ring has honored me with a request to open the discussion on this very important topic, but I can not, in the very few moments allowed, enter into any extensive general consideration of tabes. A few years ago, through the courtesy of friends, I went through several general hospitals in Philadelphia and studied the ocular conditions in every case of tabes I could find. The result of those studies, I am sorry to say now, were never published, but left a very pronounced impression upon my own mind. In the first place, a very large proportion showed a greyness of the outer halves of the optic nerves, but in many instances this was not present until late in the disease. Another point that impressed itself on my mind was the abnormalities of ocular motility, which often came on very early in the disease. It is generally said that these ocular paralyses are transient. That is certainly so in a large number of cases, but there is a group like the one presented to-day in which it is not transient. I have never seen a case in which the external recti were involved that the paresis proved to be transient. The transient cases of paralysis were always of one of the vertically acting muscles or of the internal recti. The paralysis is often quite transient, lasting but a few hours or days. In this connection I recall the case of an eloquent clergyman who was to have been one of the speakers at the dedication of the Bartholdi fountain at the Centennial Exposition in Philadelphia, in 1876. He was sitting on the platform awaiting his turn to speak, when he suddenly became nauseated and giddy, and was compelled to leave the platform. He thought it was due to the heat, but from his lucid statement it appeared to be a plain case of diplopia due to a transient palsy of the internal rectus. The symptoms disappeared after a few hours, but occasionally, afterward, he was annoyed by brief periods of disturbed vision which he learned to know were due to impaired muscular balance. I did not see him until 1881, when he was sent to me by the late Dr. William Pepper, because of this disturbance of vision. He then had, in the left eye, an absolute macular scotoma with a contracted field, and a distinctly grey outer half of the nerve. The patellar reflexes were impaired, but station was good. The disease slowly progressed until there was total atrophy of the optic nerve, and no perception of light. The right eye was healthy and vision normal; no contraction of the field and no scotoma. Perhaps six years later he came complaining of trouble with the other eye. I found here also a macular scotoma with the same appearances about the disc, and this also passed to complete blindness. His gait was now ataxic and he died a few years ago, twenty years after the transient attack of diplopia and fifteen after the commencing atrophy of the optic nerve on the left side, having been confined to his room for many years. The initial symptom in this case occurred in 1876, and for ten years afterward he pursued his professional calling and was called on for many public addresses besides, while during those ten years he could not be made to believe he was in any sense ill.

I wish to allude to one other point concerning the treatment. For many years I have been using bichlorid of mercury in these cases. I have one man who has been under my care since 1884, a novelist who has followed his calling without interruption, and is now, in addition, the editor of a literary publication, and has for sixteen years taken bichlorid of mercury internally, in doses anywhere from 1/100 gr. three or four times a day to 1/24 or even 1/12 gr., he regulating the doses himself up to the point of relief from the lightning pains. His reflexes are absent, his station impaired but variable, but at no time has he manifested any disturbances of ocular motility. He came under observation in 1884 for impaired vision. There was a central scotoma for red and some concentric contraction of the fields. He was an excessive smoker and the victim of irregular habits culminating in an occasional spree. When made to comprehend his danger, he corrected his habits in great measure, but the tabetic symptoms slowly advanced. The relief from pain secured by the corrosive sublimate is of great interest. The etiology, as we know, is obscure, but most observers regard it as due to syphilis. In one case under my care for about ten years, with paralysis of the externus, the patient believed that his disease was due to excessive venery. How correct his own view in this case was I do not know, but it was his firm conviction.

DR. JOHN E. WEEKS, New York City—I would like to suggest that in all probability this particular salt of mercury is not necessarily the only one that will produce amelioration of the painful symptoms in tabes, but that mercury in ointment, the simple metallic mercury, is sufficient in many cases. I have reference particularly to a case recently under observation, in which inunctions were used very frely, the patient being kept at the point of saturation for some time; the relief of pain, as well as the improvement in his general condition was extremely marked. The idea that tabes is a disease due to an affection of the peripheral neurons is perhaps completely established at the present time: the atrophy of the optic nerve is secondary to degeneration of the ganglion cells in the retina.

DR. L. WEBSTER FOX, Philadelphia—A man I had under observation some time ago, who had gone the rounds of the hospitals, told me the only relief he got was from excessive doses of whisky. I do not wish to encourage the drinking of whisky in such cases, but only mention this as one of the many remedies that have been applied to these cases.

DR. RING—Dr. Fox's suggestion confirms my opinion that some of these cases, even though they are specific, do not get relief from the use of antisyphilitic treatment, the lesion being rather a degenerative sequence of syphilis. It may be of interest, in closing, to note, from a letter I received from this patient the day before I left Philadelphia, that the patient has had another recurrence of the diplopia following a severe voyage and desperate seasickness.

THE AMOUNT OF MYOPIA CORRECTED BY REMOVAL OF THE CRYSTALLINE LENS.*

EDWARD JACKSON, M.D.

DENVER, COLO.

Despite the hundreds of reported cases, great uncertainty still remains as to the exact optical effect produced by removing the clear crystalline lens from a highly myopic eye. The great mass of these cases are so reported as not to throw any definite light on the optical questions involved. To point out what is our present knowledge of the subject, and to urge the reporting of more exact data regarding future cases are the purposes of this paper.

Myopia due to Excessive Corneal Curvature.—If a high myopia were due solely to excessive curvature of the cornea—the anteroposterior length of the eyeball and the refractive power of the lens being no greater than in the average emmetropic eye—the removal of the crystalline lens would cause substantially the same optical effect as it would in the emmetropic eye: that is, about 11 D. of change as measured at the cornea; or 12 to 13 D. as measured by a concave lens placed in the usual position for spectacle lenses.

Myopia due to Excessive Refractive Influence of Lens.—With a myopia due solely to the excessive refrac-

* Presented to the Section on Ophthalmology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

tive influence of the lens, whether from excessive curvature, high refractive index, displacement of the lens forward or all of these combined—the corneal curvature and anteroposterior axis remaining the same as for the emmetropic eye—the eye after removal of the lens would possess the same refraction as would a previously emmetropic eye after removal of the lens; that is, whatever the amount of previous myopia, the eye would be left hyperopic about 11 D. measured at the cornea, and would require for its correction a convex 10 D. lens placed in the usual position.

Myopia due to Increased Length of Axis.—When myopia is due to increased length of the anteroposterior axis of the eyeball, the optical effect of removal of the crystalline lens, as measured in diopters, either at the cornea or at the usual position for correcting lenses, increases directly with the increase of the axis. The higher the myopia the greater the effect of removal of the crystalline lens. Yet as to the amount of myopia that should be just corrected by removal of the crystalline lens, as to the previous refraction of the eye which when rendered aphakic will become emmetropic, different writers are widely at variance.

My own approximate estimate[1] by means of the "dioptric eye," was 18 D.; Hirschberg's, by the rule[2] of finding the correction after operation, by subtracting half the myopia from + 10 D., is 20 D.; Otto's,[3] by calculation, 20.08; Hirschberg's, by calculation, 21; Weiland's,[4] by approximate calculation, 25.61; Percival's[5], by calculation, 25.85; Weiland's, by accurate calculation, 25.952. The last three are based on the schematic eye of Listing, with the dimensions assigned to it by Helmholtz, generally regarded as the most exact conception of the average refraction of the human eye.

Let us contrast the theoretic possibilities of the case. The myopia of an eye that will be rendered emmetropic by removal of the crystalline lens will be: For myopia due to corneal curvature, 13 D.; for axial myopia, 26 D.; for lens myopia of any amount the eye will never be left emmetropic, but will be made hyperopic, 10 D.

Finally we must compare with these theoretic possibilities the effects reported of removal of the crystalline lens in actual cases; although it must be noted that the majority of these reports show, upon the very face, that they are loose and inaccurate. Very few of them are based on full and carefully determined data. In not a half dozen cases out of the whole series are measurements of the corneal curvature mentioned. Cross[7] calls attention to the uncertainties attending determinations of high myopia by the common subjective methods, and states that he used skiascopy in some of his 48 cases. In only 3 out of 114 did Deutschman recognize any astigmatism prior to operation. Of course looseness and inaccuracy in the determination of the myopia before operating, greatly diminishes the value of such statistics; and absence of measurements of the corneal curvature makes them worthless for certain important purposes.

Still, it is worth while to compare these recorded results with those of theoretic investigations. I have tabulated the recorded results of 296 cases. The first column gives the diopters of myopia before operation; the second gives the theoretical change to be expected for axial myopia, according to Eperon,[8] the third gives the average change observed; the fourth the maximum and the fifth the minimum change reported; and the sixth column gives the number of cases of each degree of myopia included. The diopters of myopia or of change are averages of the two principal meridians, where astigmatism is reported.

Previous Myopia.	Theoretic Change.	Average Change.	Maximum Change.	Minimum Change.	Number of Cases.
10	14	16.60	19	15	5
11	14.64	16.67	19	13	6
12	15.2	16	18.50	14	12
13	15.67	17.2	19	15.5	24
14	16.3	17.14	19.50	14	37
15	17	17.15	21	12	28
16	17.5	17.70	24.50	13	58
17	18.23	19	22	16	14
18	18.8	19	24	15	38
19	19.36	18.50	20	16	6
20	20.10	19.81	24	16	32
21	.....	20.20	20	19	5
22	21.4	21.25	25.5	18	15
23	.....	21.67	26	19.5	6
24	.....	22.40	24	21	3
25	.....	23	23	23	1
26	.....	23	23	23	2
30	.....	27	28.5	26	3
35	.....	29	29	29	1

It is obvious that the number of cases on which the above table is based is insufficient to furnish accurate and reliable averages. Still, the table may be taken to indicate about what those averages will be. And it does bring out with certainty the wide range between the maximum and minimum effects that may be produced. Added numbers of cases can only separate the maximum and minimum more widely.

We must conclude from this table, that for a given amount of myopia the effect of removal of the crystalline lens may vary 10 D. or more. Such a variation is too great and too common to be explained as mere inaccuracy of observation. While the general trend of the figures indicate that a lengthened anteroposterior axis is the most important cause of very high myopia, variations of corneal curvature, or of lens refraction, or of both, are factors of practical importance. We never can predict with exactness the effect of an operation until these are taken into account.

One other point is that the calculations based on the Helmholtz values of the schematic eye indicate that 25 or 26 D. of axial myopia should be corrected by removal of the crystalline lens. The reported cases indicate about 20 D. Clearly, either the high myopias are usually partly curvature myopias, or some of the values assigned to the schematic eye are at fault. The careful measurement of the corneal curves in each case, both before and after operation, with the accurate determination of the refraction at both times, would go far toward settling this question.

After lens extraction the curves of the cornea, as measured by the ophthalmometer, continue to change for several weeks or months. It is the permanent form of the cornea that is of interest in this connection; and we can not set any definite time when the changes will cease. Still, after six months the change is slight, and after a year will rarely be of any importance. Some such time must be allowed to elapse before any reliable evidence can be afforded by a given case, as to the influence of the operation in checking the tendency of myopia to increase or in bringing about a decrease.

In all cases of lens extraction through a large corneal incision, there is for a time a bulging of the cornea causing temporary increase in the anteroposterior axis of the eyeball. This gradually diminishes with corresponding diminution in the refraction of the eye. This occurrence, which is a common sequel of such operations, seems not to have been taken into account in the reported cases. It is the probable explanation of the claim that removal of the crystalline lens tends to cause subsequent shortening of the anteroposterior axis.

In conclusion, let me urge both for the good of the individual patient, and for the advancement of our knowledge of the refraction of the eye, and of this operation, the more complete and exact study of the ocular refraction and the curvature of the cornea, both

before and after the removal of the crystalline lens for high myopia.

BIBLIOGRAPHY.

1. Ophthalmic Record, February, 1898.
2. Centralblatt f. Praktische Augenheilk., March, 1897.
3. Graefe's Archiv, 1897, vol. xliii.
4. Annals of Ophthalmology, July, 1899.
5. Archives of Ophthalmology, January, 1897.
6. Ibid., October, 1899.
8. Lancet, July 1, 1899.
9. Quoted by Cross.

ON CERTAIN CLINICAL FEATURES OF EPIDEMIC INFLUENZA.*

HOWARD S. ANDERS, A.M., M.D.

Clinical Instructor in Physical Diagnosis, Medico-Chirurgical College; Physician to the Samaritan Hospital.

PHILADELPHIA.

In its symptomatic manifestations influenza is the hysteria of epidemic disease. Its puzzling obscurities, unique development, grotesque variations, distressing complications, and surprising sequels, make it paradoxically a type of the atypical in the class of infectious diseases, as is its functional analogue among the neuroses. No tissue seems too hidden; no structure, too strong; no function, too staple; no organ, too resistant, nor organism too robust to escape its Briarean grip.

This introductory arraignment is not stated as a proposition for subsequent proof—that is hardly necessary in the presence of practitioners, most of whom have already made a similar induction—but simply as a potential head from which the octopus-like tentacles grow, reach out, suck and sap their victims in the many ways more specifically referred to in what follows. My observations and deductions are based upon an analysis of 128 cases of influenza.

Onset.—The type of onset most frequently met with in the epidemic just passed was a combination of the cerebrospinal and respiratory forms; for the first two or three days, however, the symptoms of the former element predominated over those of the latter. In cases characterized by severe head, back and limb pains, prostration was extreme for from five to seven days; while those in which the dry bronchial cough was most distressing were not nearly so prostrated; indeed, many such did not feel ill enough to remain in bed more than one or two days, if at all.

A special feature in the onset of a great number of cases was the early appearance of congestion and suffusion of the conjunctivæ, a feature which, it will be recollected, was very distinctive about the third week of December, 1889, when the first cases of the great pandemic then beginning here were rapidly increasing in number.

Fever.—The mild cases showed little or no rise in temperature; and in the cases of severe suffering the temperature rose above 103, and that only during the first two or three days of the disease; in two uncomplicated cases only did the fever reach 105, each case representing an extreme of life, one having occurred in a 14-month infant, and the other in a woman of 72 years. The fever declined usually by a rapid lysis lasting two or three days. Continued fever for ten days was observed in one case. Subnormal temperature was frequent during convalescence, associated with bradycardia. In several instances the thermometer registered a daily remission ranging between 95.4 and 97 for nearly a week.

Cerebrospinal System.—Of the 128 cases, 6 were affected with such specially severe pains in the loin nerves and muscles as to indicate a true lumbago, although general pains and aching were also present. Pain and soreness of the sternocleidomastoid and other neck muscles were frequently noticed in connection with influenzal sore throat. Cephalalgia of intense type was present in 7 cases, the pains having been of a constant, severe, throbbing nature, with occasional sharp neuralgic darts, particularly through the temples. In a few cases marked nuchal pains, similar to those of a malarial paroxysm, were met with. One woman suffered greatly for nearly forty-eight hours from burning pains in the front and outside of the left thigh. There were 9 cases of influenza characterized by special involvement of one or more intercostal nerves, principally around the lower half of the chest. So prominent were the pains here that one felt almost sure that pleuritis must be present, until careful physical examination and closer study of the behavior of the pains and of the course of the case gave negative results in that direction. Enteralgia was marked in one case. In this connection Franke[1] mentions having met with peripheral neuritis of the intercostal and abdominal nerves simulating pleuritis, pericarditis, gastric ulcer and appendicitis. He refers also to the occurrence of pain and tenderness on the sole of the foot in some recent cases of "grip," due to ostitis of the tarsal and metatarsal bones, or to inflammation of the plantar fascia. Not one of my cases was so affected. However, in a case of neuritis affecting the plantar nerves of the left foot, which, for a time, closely simulated metatarsalgia or Morton's painful affection of the foot, the moderate pain, tenderness and disability beginning early in December, 1899, became particularly severe and intractable during the height of the influenza epidemic in March and April last; since that time rapid subsidence of the symptoms has taken place. This case was both rheumatic and traumatic in origin, having resulted from a strained position of the foot on damp ground while playing golf, the patient having a history of rheumatic sciatica and myositis. In 3 instances otalgia was a marked symptom; in one case facial neuralgia on the left side was the prominent feature for the first two days of the "grip" attack. Only one case manifested extreme mental disorder; this took the form of an acute maniacal delirium lasting nearly three weeks. The patient, a woman aged 50, was stubbornly deluded with the idea that she would die, even when much improved physically, saying often day and night, "I'll never get well; I'll never get well." She was passing through the menopause, had suffered somewhat from insomnia and gastrointestinal indigestion with flatulence, and had an unfavorable family history; an uncle and two brothers had died insane, and another brother is on the verge of insanity with alcoholism. The patient's previous mental and physical balance and health—before the climacteric—was excellent, and at this writing—June 4, 1900—her equanimity is nearly restored. Spitzly[2] reported a case of maniacal excitement which began on the fourth day of an influenzal attack and lasted nearly a week, ending in complete recovery.

Conjunctivitis.—As mentioned before, this was a frequent concomitant of the influenza epidemic and, as well, early in the attack of a number of cases. In 13 I found the hyperemic and watery membranes and eye-lids markedly affected, besides 4 cases in which suppuration had set in. The most severe case of purulent conjunctivitis occurred in a retired merchant aged 72, who had been afflicted with chronic articular gout for about twelve

* Presented to the Section on Materia Medica, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

years; a purulent bronchopneumonia was also associated with the influenza attack.

Otitis Media Purulenta.—This was present in 2 cases: in one it appeared five days after the onset in an infant having a severe bronchitis at the same time; in the other, in a medical student, it terminated an attack of influenza which began one week after a sharp attack of follicular tonsillitis had subsided.

Faucial, Tonsillar and Pharyngeal Inflammation.—A great many cases of influenza began with moderate coryza and faucial or pharyngeal soreness. In fact, faucial redness was found to be an early objective symptom of considerable constancy and value in the diagnosis. In 12 cases only was there distinctly marked tonsillar inflammation—not follicular—associated with the acute stage of the disease.

Respiratory System.—Laryngitis was a prominent manifestation of la grippe in 7 of my cases. There was little or no fever at any time; and the general aching and depression were seldom present to a degree that required a stay in bed longer than one day. The onset was characterized by sudden huskiness of the voice, and, within twenty-four hours, speaking became a mere wheezy whisper. It may be worthy of special record that, by stethoscopic auscultation over the thyroid cartilages of the larynx, in every case, one or two high-pitched dry or sibilant râles were heard, and during expiration only. In one case of influenzal laryngitis the nervous depression, although slight, lasted a little over three weeks.

Bronchitis was more or less common in nearly all of the cases, but I have noted 23 in which this was especially severe. And yet, the almost total and continued absence of any physical sign—any interrupted respiratory murmur or dry or moist bronchial râles—makes one hesitate to call the cause of the distressing, irritating, and exhausting coughs and substernal sense of tightness and oppression a real bronchitis. Indeed, it seemed that the cough was due rather to bronchial nerve irritation—in view of the selective affinity for nervous tissue by the active bacilli or toxins of this disease—or to congestion of the mucous membrane, with scanty, tough exudation, if any at all.

Marked dyspnea was a feature in several cases without, however, any symptomatic or physical evidences of cardiac, pulmonary or renal complications to account for it; and hence the inference that it was purely nervous in origin is probably a fairly true one.

Bronchopneumonitis was associated with influenza in 5 cases, having developed within six or seven days after the first symptom of the "grip" attack. The only physical signs of diagnostic value were those elicited by auscultation; especially in children were palpation and percussion of no service, because of the thin, elastic chest-walls and normally exaggerated resonance as compared with adults, so that any relative dulness that the small area of catarrhal consolidation might produce was practically eclipsed by the surrounding resonance rendered all the deeper and louder in tone by the tympanitic quality resulting from the adjacent relaxed and congested lung tissue. One case, in a very old man of gouty habit, with a patch of consolidation about the size of a small orange below the left scapula, terminated in an abscess and final healing. Soft pleural friction sounds were heard over the area. Thick greenish-yellow pus was expectorated freely for two weeks.

Dry pleuritis over small areas in the postero-axillary region was associated with 5 cases of influenza. In 4 cases of pulmonary tuberculosis, the dry pleuritis over the seats of consolidation was distinctly aggravated, as regards pain, cough and pleural crepitation, during superadded attacks of la grippe.

Gastrointestinal System.—Anorexia was common in most cases, but in 4 instances the depression of function was so extreme as to be really quite distressing for two or three weeks. The tongue was heavily coated and flabby, as in cases of chronic gastric catarrh, and while nausea and vomiting were absent, the aversion to all food of even the most delicate and appetizing preparations and service was so extreme as to necessitate rectal feeding for a while. In 3 cases—all women—the attack of influenza produced such nervous irritability of the gullet and stomach that the taking of liquid, soft or solid food gave rise to immediate painful oppression and efforts at eructation or regurgitation back of the precordial and epigastric regions, due most likely to cardio-spasm and pyloro-spasm. Flatulence and sluggishness of the bowels were present in a few cases otherwise normal in function. In 2 instances deficiency of liver action was pronounced, as shown in pasty, clay-colored stools, although jaundice was not evident.

Cardiovascular System.—In 3 severe or fulminant cases, two of which were in children, acute dilatation of the heart[3] was demonstrable by percussion, with diffuse, tumultuous ventricular impulse, and soft, short, systolic, blowing murmurs of relative insufficiency at the auriculo-ventricular orifices. These physical signs disappeared completely in convalescence. Tachycardia, with a pulse-rate of 142, though not much out of ratio with the temperature, namely, 105 F., occurred in a woman of 74 years of age. Bradycardia, however, was a remarkably frequent accompaniment of influenza recently during the convalescent period. This was especially noted in 13 cases, all adults with the exception of a girl of 11 years, who had a very mild attack; after defervescence, which occurred the third day, her pulse-rate varied between 56 and 65 for several days. In the other instances, abnormally infrequent pulse-rates varying between 44 and 60, and lasting from three to seven days was the usual occurrence. Nervous depression and subnormal temperature were often associated, as observed also by Byrne.[4] From confirmatory conversations with a number of practitioners it would seem that bradycardia during convalescence has been a marked feature in recent cases of influenza. Painful, excessive throbbing of the abdominal aorta was a prominent symptom in one young woman of hysterical tendency.

Vasomotor disturbance, in the form of greatly exaggerated and depressing flushes, was a feature throughout the course of the attack in three women passing through the climacteric. The pulse was peculiarly irregular as to rhythm and volume, along with occasional intermittency and persistent compressibility in 7 cases convalescing from "grip."

Influenzal Nephritis.—There were 2 cases of acute nephritis, from the causation of which everything could be excluded except influenza. Both patients were males: one aged 38, the other 18 years—seen with Dr. T. V. Crandall. The former had had a chancre, and had been a heavy drinker of alcoholics. The onset in both cases was sudden and characterized by the general pains and febrile disturbances so common, followed, in a few days, by a puffiness of beginning dropsy. Albuminuria was copious, one-third by volume in the older man, and a trifle over one-half in the other; the tube-casts were more abundant in the urine of the younger man, and were covered with renal cells and leucocytes, but later became granular. The older—syphilitic—patient died

in uremic delirium; the younger had extreme anasarca, but is now on a fair way to recovery, with free urine of 1018 sp. gr., only an occasional cast and, as yet, no distinct cardiovascular changes.

Herpes labialis was observed in 30 per cent. of the cases; but no skin eruptions similar to scarlatina or measles, as reported by Herman,[5] were witnessed by me.

Complications.—There were 2 cases of influenza which, during the decline of the fever, but before the normal was reached, were complicated with lobar pneumonitis, one in the right, the other in the left lower lobes, with pronounced pleuritis at the same time. Both cases ended in pulmonary abscesses. One patient was a boilermaker, recovering in three weeks; the other was a colored sexton with a tubercular family history, and is now—June 4—in his fourth week of typhoid fever with the abscess cavity gravely retarding his chances of recovery.

Nephritis as a complication occurred in one case, a young schoolmistress, while suffering from a recurrent and fatal attack of "grip" during the second week of April. Her first attack, from which she recovered fairly well, lasted throughout the last week in January and the first two weeks in February, and was complicated also with extensive right-sided fibrinous pleuritis. It should be stated, too, that she had had chronic rheumatic endocarditis with mitral insufficiency and cardiac hypertrophy for twelve years.

Peripheral neuritis complicated 6 cases; in 2 the shoulder was affected. There were occasional burning pains, increased on motion of the deltoid and triceps, felt in those muscles, and passed along the course of the circumflex nerve, and of the musculospiral nerve at the insertion of the deltoid tendon, but not below the elbow. In 2 cases the neuritis was limited to the antero-external surface of the thigh—anterior crural nerve—and in two others, to the lower part of the leg, coursing especially behind, one the external, the other the internal malleolus, and over the instep, apparently quite superficial. These neurites developed usually during the beginning of the subsidence of the most acute symptoms and lasted from three weeks to two months. Paresthesias and slight paresis were noted, but no palsies.

Upon other diseased conditions the complicating effect of influenza was always varied, sometimes interesting and seldom absolutely negative. It was my experience, however, that whereas superadded influenza was fatal in but one instance—that one of chronic endocarditis previously referred to—the fatalities were more frequent in which influenza was itself complicated with some other affection. In a case of gastric ulcer in which blood was vomited copiously several times, the only effects were elevation of temperature, moderate bronchitis, and slight delirium for six days. In 2 cases of emphysema the chronic bronchitis was very much aggravated, the sputum became purulent and viscid, and the cough distressingly hard and weakening to the body. Cardiac dilatation and dyspnea were threatening in one case. Four cases of dry tubercular pleuritis were marked by pain, cough and increased friction murmur. An aged Jewess, with kyphoscolitic chest, chronic adhesive pleuritis and chronic bronchitis with emphysema, suffered great intensification of cough and dyspnea; the bronchitis became purulent, and fever and marked prostration ensued. In 2 cases subject to asthmatic attacks for years, the effect of influenza was to develop these attacks with intensity, and in both cases to give rise to purulent bronchitis. One of the patients had had hay asthma, coming on late in August, for many years, never at any other time, but said he suffered the same during his "grip" attack. Three cases of chronic valvular endocarditis affected with la grippe showed some cardiac arrhythmia and dyspnea. A walking case of pernicious anemia manifested only irritative dry tracheobronchial cough and increased weakness and dyspnea, and recovered nicely within ten days. In a case of large uterine myofibroma there were several attacks of fainting and increased uterine pains and a hemorrhage. The pains and after-depression in two cases of dysmenorrhea were considerably increased during the influenzal attacks. A woman of 56 years, of lithemic habit, who had been under treatment for neurasthenia for three months, was seized with an attack of influenza in the middle of April, while convalescing, and suffered great physical prostration and considerable cardiac irregularity for two weeks.

I hesitate to do more than mention that two cases of tertian intermittent malarial fever came under my care during the height of the "grip" epidemic; for, although no estivo-autumnal parasites were found in the blood of either patient—only the tertian hyalin and pigmented forms—I know of no data which would justify the claim that influenza is a predisposing cause of malarial attacks, even when so exceptionally prevalent during a season characterized by the recurrence of plasmodial activity in persons having had one series of paroxysms, as occurred in both of these cases last autumn; still it may not be altogether a hypothetic blunder to assert the possibility, at least, of such an etiologic relationship.

Recurrences.—There were four persons in whom second attacks of influenza were experienced after complete recovery from first attacks—hence, not relapses—after intervals varying from three to six weeks. Two were primary cases of pulmonary tuberculosis, one was a case of chronic valvular endocarditis—mitral—and one a woman at the menopause.

Sequelæ.—The following were observed: Unilateral sweating of the right side of the face and neck only, in a man aged 42; this symptom was noticed first two weeks after convalescence, lasted six weeks and disappeared unassisted as suddenly as it came on. Phlyctenular keratitis occurred two weeks after an attack of influenza in a negro boy 3 years of age, with a moderate degree of rickets. Erysipelas of the face and neck followed one week after a "grip" attack in a middle-aged woman, and terminated in an egg-sized abscess at the base of the left posterior anatomical triangle of the neck—inner portion of supraclavicular fossa—with recovery after incision and drainage. Melancholic depression lasting nearly two months followed a severe seizure in a woman aged 52, in the climacteric. Total deafness resulted in a girl of 3 years, who had severe head pains and delirium for one week. Paraparesis lasting several weeks was present also, but cleared up completely. Neuritis in the left shoulder in 1 case; and marked physical prostration and lack of ambition to resume any work whatsoever for some time after convalescence was established, were common to many patients.

Discrimination from other Affections.—It is not my purpose to enter into any details concerning the diagnosis or differentiation of influenza from other diseases. But closely woven with the warp threads of the clinical features previously outlined are the woof threads of diagnosis shuttled to and fro often in the judgment until the morbid design is complete, true, well-defined, substantial and therapeutically suggestive. So that, it may suffice to mention merely those affections that, in my ex-

perience, entered into the question of diagnosis. Thus, the symptoms of onset and development not infrequently made it necessary to decide upon influenza by the exclusion of the following diseases, principally: Acute muscular rheumatism or myositis, follicular tonsillitis, measles—in children, prior to the skin eruption and in the absence of Koplik's spots—intermittent malarial fever, cerebrospinal meningitis and typhoid fever—in lingering febrile cases.

In conclusion, among certain reflections that may be expressed based upon a study of some of the clinical and epidemiologic characters of influenza recently prevalent, are the following:

1. The disease has a ferret-like selection for "weak spots"; for the defective strands in the systemic rope, and especially for nerve tissue. Huchard[6] believes that the frequent pulmonary congestions met with indicated lower arterial pressure due to paresis of the vagus and diminished elasticity of the pulmonary vesicles.

2. The prominence of suppurative complications. Reading the recent classical Wesley M. Carpenter Lecture, by Dr. F. A. Packard, on "Infection through the Tonsils," makes one alert to the probability of the tonsils being gateways for the entrance of pus staphylococci and streptococci, as well as the bacilli of Pfeiffer. Congestive redness of the fauces appearing a day or two before the attack has been testified to by a number of careful observers. Huchard refers to the seriousness of secondary infection induced even in mild or attenuated forms—of influenza—by lowering the resistance and exalting, seemingly, the virulence of the ordinarily harmless bacteria of the body. It may be well, as Cotton suggests, that the intractable cases of la grippe are due really more to a streptococcus or staphylococcus infection, similar to the various resulting suppurative complications in pneumonitis, tuberculosis, scarlatina, pertussis, diphtheria, tonsillitis, and so on.

3. The relation of seasonal and meteorologic conditions to the prevalence of influenza and certain complications, as pleuritis, pneumonitis, neuritis and tonsillitis: The height of the severity of the "grip" epidemic was unusually late in coming this year—1899-1900—last year having been more of a normal seasonal "grip" year, the height lasting about seven weeks, beginning in the first week in December, 1898. As my notes show, there was a progressive increase in the number of cases of influenza from late in December, 1899, till April, 1900, the climax of the recent epidemic occurring during the six weeks from the middle of March to the end of April. My influenza cases numbered 5 in December, 12 in January, 22 in February, 35 in March, 47 in April, and 7 in May, 1900.

Now, as shown in a paper read by me in May, 1899, before the American Climatological Association,[7] influenzal outbursts are preceded by relatively warm, moist, and calm weather, but prevail with the onset of cold, clear, dry and windy weather, when the meteorologic data show an abnormal increase of the barometric pressure, lower temperature, abnormal temperature ranges and diminished equability, lower percentage of relative humidity, and increased prevalence of north and northwest winds. These observations I was able to confirm during the recent epidemic in connection with practically all of my case groups.

The meteorologic conditions favorable to the epidemicity of influenza prevailed at a time when the respiratory complications noted are usually favored, also, as independent affections, that is, after a remarkably warm and mild breeding December we had a remarkably late and cold spring, a season when the imprudent and impatient expose themselves too much and clothe themselves too little; insistently and recklessly making a fetich of a date or a festival to change their attire instead of sensibly adapting themselves to the axiom that they can not change the weather—hence the anginas, pleurites, pneumonites and neurites.

BIBLIOGRAPHY.

1. Archiv für klin. Chirurgie, Band lix, H. 3.
2. British Med. Jour., March 3, 1900.
3. Forchheimer: Festschrift in Honor of A. Jacobi, May 6, 1900.
4. THE JOURNAL A. M. A., March 10, 1900.
5. New York Med. Jour., Feb. 17, 1900.
6. Bull. de l'Acad. de Méd., Feb. 27, 1900.
7. The Relation of Local Meteorologic Conditions to the Influenza Epidemic in Philadelphia, Winter of 1898-99. See Phila. Med. Jour., August. 19, 1899.

SURGICAL CIRCUMCISION.*

FERD. C. VALENTINE, M.D.

Professor of Genito-Urinary Diseases, New York School of Clinical Medicine; Genito-Urinary Surgeon, West Side German Dispensary; Genito-Urinary Consultant to the Metropolitan Hospital and Dispensary, to the United Hebrew Charities, Etc.

NEW YORK CITY.

It would be a work of supererogation to recite here the indications for removal of the prepuce; your specialty has made them an every-day occurrence through the whole gamut, from those immensely elongated foreskins with adhesions, concretions of urinary salts and smega, to the barely enlarged fold which causes no perceptible local disturbance and yet provokes most serious reflex conditions. I believe that my experience does not differ from that of other genito-urinary specialists, who are often called in by pediatrists or general practitioners to operate, and afterward learn that the removal of an almost normal foreskin was followed by cessation of enuresis, infantile convulsions, or glycosuria that had resisted other treatment.

How should circumcision be performed, and who should perform it? The preparation of the field of operation is naturally the same as that employed for any other surgical procedure, and the details and precision to be observed are necessarily the same.

Ordinary humanitarian sentiment prevents consideration of circumcision without anesthesia. It is perfectly true that millions of infants have been circumcised while entirely conscious, and no subsequent evil has befallen them; I do not believe, however, that any physician would rend a mother's heart by so torturing her babe. It is specious to hold that an infant's sensibilities are not sufficiently developed to permit it to perceive pain. If so, why does the infant cry when a maladjusted pin pricks it, or when its delicate skin is irritated by a badly folded or moistened diaper? Is it logical to assume that its shrieks of agony, when the foreskin is cut or torn off, are but reflex?

The choice between local or general anesthesia is necessarily governed by the age and condition of the patient. As a rule, general anesthesia should be employed in all children under the fifth year, provided no cardiac or pulmonary condition prohibits. General anesthesia too may be necessary in older children, whose mothers have striven to render them unfit for the battle of life by pampering them into milk-sops, or by convincing them that they are not born to suffer even the slightest inconvenience under any circumstances.

* Presented to the Section on Diseases of Children, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

Those brave little fellows whose mothers reared them properly in the just pride of giving *men* to the nation, are easy subjects of local anesthesia when circumcision is required. Some of these will insist upon being so placed that they can see every step of the operation and ask numerous amusing questions while it is being performed.

When deliberately done, the operation requires but a short time; the few instruments for the purpose are in every pocket-case. When carefully performed, under strict aseptic precautions, it leaves, within four to seven days, a union of skin and mucous membrane as perfect as if the patient had been born without a foreskin.[1]

Simple as is the technique of this circumcision, it in great part answers the question, "Who shall perform circumcision? We might stretch a point in this regard when viewed as a religious rite, if those who perform it had received the instruction to do a surgical operation in a surgical manner. Considering the origin of the operation in detail would lead us into the domain of theology, which we have as little ability to invade as have non-medical men to perform surgical operations. But we may recall that when Moses laid down the law of circumcision the priests were not only theologians, but law-givers and physicians as well. Five thousand years ago diseases were necessarily treated and operations performed in the light of the then existing knowledge. The extraordinary vital resistance of the races and of individuals who are circumcised may account for the wonderful escape from infection, which the majority of infants undergo. The Mohelim or Mauhelim in different regions perform the operation differently. All grades of uncleanliness are common. Some circumcisers suck blood from the cut; no one is deputized to ascertain that the operator (sic) is free from tuberculosis, syphilis, carious teeth, or even that he has a clean mouth with which to perform this filthy act. Others squirt a mouthful of wine or vinegar over the wound from an equally unexamined mouth. Some, it is true, have a very neat set of instruments for performing the operation, but none of them have as much as a bit of sterilized catgut to ligate the artery of the frenum, should it be cut. Others tear the prepuce with the thumb-nail, which is kept long for the purpose. The fact that finger-nails can not be kept aseptic suffices to denounce this method.

It would be un-American to deny any one the performance of an act which his religion demands. But when this act entails a surgical procedure upon a defenseless babe, the safeguards that should be placed around it furnish a question that jurists may well consider. Sociologists and political economists, too, might well investigate whether the risks of spreading syphilis, tuberculosis, erysipelas and other diseases by non-professional operators outweighs any fancied encroachment upon the rights of the individual. A glance at textbooks on law teaches that even the unborn have rights; has not the child a week old an inherent right to protection from infection? Has not the public a perfect right to protection from the spread of disease? Does not the babe when infected with a communicable disease become a menace to the public?

Last year France enacted a law forbidding circumcision performed otherwise than in the presence of a physician. This was a step toward the proper end, but it can not prove as effective as might be desired; operators who must invariably expect asepsis of those who aid them know too well from sad experience the result of placing too much confidence in them. Unfortunately, the French law alluded to became effective at a time when our sister republic disgraced herself by a wave of irreligious persecution. The purpose of the law would then necessarily be misunderstood by the ignorant.

It is far from me to inveigh against circumcision of infants. To do so would be to defy the experience of all practitioners and particularly that of genito-urinary specialists. It would be folly to assert that the Jews of to-day are more moral than their uncircumcised brethren; the fact, however, remains that numerically those circumcised in infancy occupy less of a space in the annals of venereal diseases than do others.

While these considerations could be extended almost throughout the whole domain of medicine, I think enough has been said to ask your discussion of the following

1. Circumcision is a surgical operation, requiring all the precautions of asepsis and surgical technique, without which it is a danger to the individual and to the community.

2. Circumcision of infants, especially when the prepuce is large, contracted, adherent or deformed, is a benefit to the individual and a protection to the community.

3. The rights of individuals to the free exercise of religious liberty would be in no wise infringed if the operation of circumcision were performed by physicians.

4. The state should protect future generations by requiring that circumcision be performed by physicians.

5. If, for the sake of religious sentiment, devout Jews desire to have their babes circumcised by none but Jews, there are many Jewish physicians who could become Mohelim, so that while performing the religious rite they may conduct it as modern aseptic surgery demands.

31 West 61st Street.

DISCUSSION.

DR. LOUIS FISCHER, New York City—I would like to ask the author the after-treatment of circumcision—whether he uses merely a dry gauze dressing, a dusting powder, or what?

DR. EDWIN ROSENTHAL, Philadelphia—I would like to know whether Dr. Valentine advocates—in infants 1 or 2 days old having an impervious meatus—the use of the same technique? I have never known the professional circumciser to use any sutures, simply using lint. Does Dr. Valentine advocate the use of sutures and the same technique in the very young infant as in the adult? I would also like to ask whether he advocates the performance of circumcision from a purely hygienic standpoint, even in persons in whom there is no special indication?

DR. F. C. VALENTINE, New York City—I resort to no after-treatment. Inasmuch as the gauze retains the mucous membrane and skin together, nothing more is required. The slight oozing of blood which follows the coaptation of the lips of the wound takes place into the gauze itself, thus completing the adjustment and retention of the parts *in situ*. It forms a hard ring which drops off in from four to seven days, leaving no evidence of circumcision. I think in an infant of a day or two, with merely a tight and not large foreskin, I would content myself with simply snipping the prepuce, because usually when a child is relieved so early there is absorption of the dependent foreskin so that barely any deformity remains. On the other hand, if there are adhesions of the mucosa to the glans, I would certainly remove the entire foreskin for fear of a return of the adhesions. The desirability of circumcision is too large a subject for discussion at this time, but it is generally believed that fewer Jews and circumcised Mohammedans come to the genito-urinary specialist for the treatment of venereal disease than other nationalities. I say that they are comparatively rare, and by that I mean that perhaps in an average of say fifty cases daily I see four or five Jews. In southern Russia there is a sect of Jews who do not practice circumcision, and I am told that among them venereal disease is just as fre-

1. The complete technique of painless circumcision of infants and adults is fully detailed on pages 90 to 101 of "The Irrigation Treatment of Gonorrhea, Its Complications and Sequelæ." Wm. Wood & Co., New York, 1900.

quent as among the uncircumcised of other faiths. We hear considerable of making the toilet of the prepuce, yet it will often be found very filthy in men who are singularly clean about the rest of their person. I am not prepared just yet to advocate universal circumcision.

DR. FISCHER—I saw a secondary hemorrhage following on the second day after a surgical—not a ritual—circumcision. It was not a case of hemophilia. I should like to know the after-treatment for the unusual, not simply for the normal, cases.

DR. VALENTINE—It is inconceivable to me how secondary hemorrhage can occur except in cases of hemophilia. It is a singular thing, however, that hemophilia occurs more frequently among the Hebrews than in any other race. I must admit I have seen secondary hemorrhage follow ritual circumcision. Here, torsion or ligation has been required. Uncleanly people sometimes allow the circumcision wound to become dirty and infected. By the technique alluded to in my paper the parts are protected from infection, though before adopting this method I did occasionally see these cases. I saw one case of infection after circumcision by the method described in a case which had been operated on by a beginner. Examination showed a stitch abscess from unclean catgut, and a neglect of proper precautions at the time of operating. These accidents should not occur. I have never performed circumcision upon a hemophile, but should I do so the chances are that I would try the effect of suprarenal extract. I should also treat the hemorrhage on general surgical principles. Sometimes in performing circumcision a vein is cut, with resultant hematoma. Even a very small hematoma can cause considerable fever—perhaps even as high as 104.5. In one such case all that was necessary was to curette out the hematoma and re-dress the parts. Within an hour or less the temperature had dropped to the normal.

TREATMENT OF LARYNGEAL TUBERCULOSIS AT THE MONTEFIORE HOME FOR CHRONIC INVALIDS (N. Y.)*

W. FREUDENTHAL, M. D.
NEW YORK CITY.

One of the most difficult chapters in the treatment of the upper air-passages is the management and treatment of laryngeal tuberculosis. In fact, to the hospital physician this has been one of the most disagreeable tasks possible. To see these most miserable of sufferers live for months, or even years, with constantly increasing pain, for whom even the swallowing of their own saliva is a dreaded effort, has been an occurrence of every day; and we, as physicians, have been as a rule practically helpless in combatting this disease. Morphin, internally and locally, quickly reached its effectiveness in most cases, and for many patients the cocain spray is extremely disagreeable. For the last ten years I have had to attend to these patients at the Montefiore Home, where we have sometimes as many as twenty or thirty suffering from laryngeal tuberculosis in every stage possible. That under the above condition of our comparative helplessness it was not pleasant to treat these patients and see them suffer pain constantly, with occasional relief lasting half an hour or a little longer, every one will admit. Luckily things have changed in the last few years, and I confess that nowadays it is a pleasure to treat such patients. They look happier, they feel better, can swallow much better, and last, but not least, they are anxious to receive the treatment, while formerly they not infrequently tried to avoid it. All these facts have also been noticed by other physicians who have seen the patients at the above institution.

However, before I describe the methods applied nowadays, I will say that there is a stage foregoing the formation of tubercles and ulcerations in the larynx. Such conditions we can see quite often in an institution like the above one, where there are besides the many consumptives just as many afflicted with some form of nervous or other troubles. These conditions in the larynx, which I might sum up under the name of

"PRETUBERCULOUS LARYNGITIS,"

have to be treated with as much care as the outspoken tuberculous affections of the larynx. Of course, this is done with greater ease in a closed hospital with mixed patients—i. e., tuberculous and non-tuberculous—where every one showing any of these symptoms is considered suspicious and treated accordingly. But with people who already have signs of tuberculosis of the lungs, and manifest some catarrhal symptoms in the larynx, this can and ought always to be done in private or dispensary practice as well. If in this stage a patient is treated conscientiously I am convinced that in many cases an outbreak of tuberculosis of the lungs can be avoided.

The symptoms of this stage are anemia, hyperemia and swelling. In making these divisions I agree perfectly with Otto Ringk,[1] when he says: "The treatment of this first stage is to be considered according to whether we have to deal with anemic or with hyperemic mucous membrane. The strictest differentiation between the medicaments after this point has been decided assures the possibility of success. The former naturally will need more irritant drugs than the latter.

In the anemic stage I have found the following to be of service: insufflations of zinc sozoiodol with sugar-of-milk, with applications of nitrate of silver in 3 per cent. solutions, liquor ferri sesquichlor. (1 to 30) and balsam of Peru with spir. vini rectif. I have not risked applying any strong astringents or caustics for fear that we might get not only a hyperemia, but as it occurred in a case of Ringk's, an edema of the entire mucous membrane of the larynx. I need not remark that such an accident is the last to be desired, and that we have to be on our guard in making applications.

In the hyperemic stage I have used, with here and there remarkably good results, the following solution: Creosote, 5; spir. vini, 10; glycerin, 50. (The creosote can be used even stronger; see Schech.) Applications of tannin, alum and other astringents have also been used with benefit. That different inhalations ought to be used besides this treatment, and that especially at this stage any catarrhal condition of the nose or throat ought to be looked after very carefully, I will only mention in passing.

After ten years' experience at the Montefiore Home, I am convinced that there exists such a pretuberculous laryngitis, and that it can be treated successfully in a number of cases, thus preventing the real outbreak of tuberculosis in the larynx. Once an erosion or an ulceration is to be seen in the larynx, we treat the patient as tuberculous. This leads us to tuberculous laryngitis itself, and we see here, as is generally conceded, four different forms, viz.: 1, the tuberculous infiltration; 2, the tuberculous ulceration; 3, the tuberculous tumor, and 4, miliary tuberculosis of the larynx. I do not wish to go into details as to the pathologic anatomy of these conditions. Allow me to remark only that I have repeatedly seen, and here I agree with B. Fränkel, miliary tubercles in the larynx. Virchow even recommends the larynx to all those who want to study the true tubercle. These tubercles, however, are located very superficially and break down at a very early stage, leaving a small shallow ulcer. This is the reason that

* Presented to the Section on Laryngology and Otology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

1. Monatsschr. f. Ohrenheilkunde, p. 180, 1889.

we so often see ulcerations but not miliary tubercles. At the Montefiore Home, where I examine the patients and watch them at a time when they show no symptoms of tuberculosis and complain only, perhaps, of a little scratching in the throat, I repeatedly saw, as I have said, some miliary tubercles.

That in the general treatment of laryngeal tuberculosis pure air is as essential as anything else, goes without saying, and this fact has been recognized by the directors of the Home. Upper Broadway—near One Hundred and Fortieth Street—where this institution is located, has become a great thoroughfare, with entirely too much dust and traffic for consumptives. Therefore, a new home with all modern improvements is being erected in the country, at Bedford Station, N. Y.; and it is the purpose to gradually remove all the consumptives to this country place. This plan will surely bear excellent results in the near future. I need not mention that general treatment is carried out, including hydrotherapy, rest-cure, etc. A great problem for us still is how to keep all these patients occupied, but I hope we shall come nearer the solution of this when all consumptives are housed in the country.

LOCAL TREATMENT.

We now come to the most important point, the local treatment. The majority of our patients are in an advanced stage, and the treatment is thus so much more difficult than it is in many other institutions. At one time the application of different powders was very much in vogue. The most important of these, which still are popular to a certain degree, are boric acid, iodol, europhen, dermatol, aristol and pyoctanin. The latter is recommended by Bresgen, Rosenberg, Schech and others.

More important were the fluids used for direct application, and there is hardly any new or old drug that has not been recommended. The iodoform ether solution, which at one time could be seen in almost every clinic in the United States, is now very little used; Rosenberg's menthol with oil, carbolated glycerin, resorcin, balsam of Peru with collodion, the phenolum sulfuricinicum, the injections of creosote and orthochlorophenol in glycerin, all have their followers, and have been applied with some satisfaction in a certain number of cases.

Lactic Acid Treatment.—The remedy par excellence, which for the last ten or twelve years has predominated over all, is lactic acid. I can speak with a certain authority about lactic acid, as I witnessed the very first experiments made in Berlin in 1885, by Professor Krause, and followed up some of these cases until their death. Since 1885 I have used lactic acid constantly. I know its advantages and disadvantages. We had seen tuberculous ulcers heal under nitrate of silver, under zinc chlorate, and other astringents, but it was claimed that the proportion was larger under lactic acid. There was some truth in this assertion, and I myself applied lactic acid during all that time, merely for want of something better, for I knew how many patients dreaded these applications—the pain, which sometimes lasted from ten to twenty hours after lactic acid had been rubbed into the ulcerations, was terrible to them, and others again feared the spasm of the glottis more than their usual pain. In a dispensary, where consumptives come and go, we do not notice how many stay away from such treatment, and judge only from those who remain. It is different in a sanatorium where the same patients are seen constantly, and I know quite a number who used all kinds of excuses only to stay away from the lactic acid treatment. It is different now. Since new drugs have given us the ability of making these people comfortable, they anxiously wait for treatment, and I have seldom known any one to miss it voluntarily.

Menthol-Orthoform Emulsion Treatment.—The way we proceed is the following: We generally cleanse the larynx, if this be necessary, with any indifferent spray, or swab it with cotton, etc. This is advisable also when there are secretions below the larynx in the trachea and down to the bifurcation. This previous cleansing makes the patients cough up the greater part or all of this secretion, and they can retain the drugs better. Whether these drugs do not in this way reach some ulcerations in the trachea which can not be seen by laryngoscopic examination, is a question which I should not like to decide here. It is, however, conceivable that fluids especially run down the trachea and gradually reach deeper ulcerations in the trachea.

After this cleansing a powder consisting of saccharated suprarenal gland—about 3 to 6 grains—is insufflated into the larynx mostly, on to the ulcerations. I do this in the beginning of the treatment, when I do not know the toleration of the patient, for the following drugs. But now it seems to me almost rational to use it in all cases of dysphagia, as it helps to prolong the local anesthesia. I have entirely abandoned the use of cocain for these cases, and this for several reasons: 1. The paresthesia following the application of cocain is very disagreeable to many patients. 2. It undoubtedly affects the heart in some cases. 3. The solution decomposes quickly—this holds good for all cases. The powdered suprarenal gland has no toxic effect if applied in this manner; it does not produce the paresthesia, but on the contrary, within one-half to one minute, a pleasant cooling sensation sets in, and it does not decompose readily in this powdered form.

The next step is the application of my menthol-orthoform emulsion. I have been using this emulsion for over two years, and the more I use it the better I like it. Carl Kassel was the first one to use an emulsion with olive-oil. He says[2] that my emulsion is a great improvement on his, but that a bad taste persists after its use. I have never heard any complaint of this from any patient, nor from any other physician, and I think the Doctor is mistaken in this respect. If anything, the taste of the menthol-orthoform emulsion is pleasant.

There can be no doubt that the anesthetic properties of the orthoform on the mucous membranes of the ulcerated larynx are of immense value. And there is no longer any question that by means of the application of orthoform we are able to relieve pain, and cause a disappearance of the difficulty in swallowing, lasting, according to my present experience, from a few hours to three, four, or even five days. These patients are not only able to take nourishment readily, and thereby are placed in a better position for a possible cure, but in favorable cases we completely remove the pain.

In all irritations of the larynx menthol is of excellent service. No doubt the good results obtained some fifteen years ago, by my friend Prof. A. Rosenberg, of Berlin, with injections of menthol with oil, were due to this fact. It relieves the cough and with this much of the secretion. This is the reason I added menthol to the above emulsion. I use the following:

R.	Menthol	1, 5, 10 or 15
	Ol. amygdal. dulc.	30
	Vitelli ovorum	25
	Orthoformi	12
	Aquæ dest. q. s. ad	100

Ft. emulsio.

2. Ibid., p. 245, 1899.

I commence with 1 per cent. menthol in this emulsion, and as quickly as the toleration of the patient permits I increase it to 10 per cent., and it has been in the rarer cases only that I have used 15 per cent. menthol. This is a drug that causes a burning pain, especially if applied as it has to be done, directly on the ulcerations. But as I should not like to miss its good effect, as above stated, I frequently induce preliminary anesthesia with the suprarenal gland. But many patients tolerate menthol without any pain whatever.

I wish to cite a few examples of cases treated in this manner.

C. B., 48 years of age, a cigar-maker, had been forty years in the United States. His mother died of dropsy, his father of old age, and one brother of tuberculosis. He has three children; one child died of pneumonia. He was a moderate drinker, but heavy smoker—20 to 30 cigars daily. Six years ago he had some diseases of the lungs, which kept him in bed five weeks.

Oct. 17, 1899, when seen, he was below the average height, and somewhat poorly nourished. Percussion was dull in the upper left portion anteriorly and posteriorly, with tenderness on percussion in many places, especially on the left shoulder. Over both lungs were numerous small moist râles, especially over the left apex; over the right apex expiration was roughened and prolonged. The spleen was enlarged and palpable, and there were tubercle bacilli in the sputum. The larynx showed interarytenoid infiltration with papillomatous excrescences, slight ulceration on the right side of the epiglottis. I injected menthol-orthoform emulsion—menthol 10 per cent.; no cocain.

By March 22, 1900, the ulcerations on the epiglottis were healed, and the interarytenoid infiltration had disappeared. The epiglottis was now marked horse-shoe shape, and much thickened. There was no pain till the day before. A broad, somewhat deep ulceration on the right aryepiglottic ligament was to be seen. For experiment, no application was made.

On March 26, pain in swallowing was severe, and he could eat but one meal daily. The ulcer was covered with a thick tenacious phlegm and debris. Cleansing of the ulcer and application of menthol-orthoform emulsion was tried, and repeated March 29, with such success that on April 2 the patient felt much easier again and could eat, but had some pain. The ulceration looked clear, and was only superficial.

On April 16, there was renewed attack of pain on the right side of the larynx. The right arytenoid was enlarged and edematous.

April 21, after a quantity of badly tasting pus had been expectorated, the patient again felt easier.

On May 14, subjectively, the patient remained the same during all the treatment; i. e., under regular treatment with orthoform-menthol emulsion he could swallow all the food he wanted, and his appetite being good he ate well. Only when taking thin fluids as water, tea, etc., he had to be careful, else he would get a paroxysm of coughing which would be followed by vomiting. Objectively his condition was worse. The epiglottis was very flat and very much thickened; the aryepiglottic ligaments—especially the right one—were infiltrated and the arytenoids enlarged. The ulcers would come and disappear again after treatment.

I selected this case first to show how a man with such advanced laryngeal tuberculosis can go around eating his meals regularly, joking and enjoying life. Of course, *quoad finem,* his prognosis is doubtful, especially as the condition of the lungs became worse. But if this man has to die we have at least saved him months and months of terrible, sometimes almost unbearable, pain. Besides, we have given him the possibility of being nourished well for the last six months, and if his power of resistance is strong enough he has another and greater chance of recovery. That such ulcerations do heal under the treatment mentioned, this case has shown repeatedly.

Before giving the history of the next case, let me quote from a former article of mine regarding surgical intervention in such cases. I remarked[3]: "I am able to report 29 cases the history of which I have found, although I know that more than double this number have been operated upon by me. I will, however, base my conclusions only upon these 29 accurately described cases. Of these 18 were not improved, in 7 a slow amelioration occurred which could be attributed to the operation, and in 4 an almost immediate improvement took place. Of the 18 unimproved cases, 13 were in an advanced stage of pulmonary phthisis, that is, with formation of cavities, etc., and 5 were in the earlier stages. None of these 18 patients experienced any relief after curettement; the majority, indeed, attributed the deterioration in their health to the operation, and in many cases I was of the same opinion. I was struck by the fact that a large number of infiltrations, with or without formation of ulcers, were in the interarytenoid space, forming the well-known polypoid excrescences on the posterior wall. In the 7 patients of the second class slow improvement occurred, and I have noted this in affections of almost all parts of the larynx. As this amelioration constantly followed on the surgical treatment, I consider myself justified in ascribing it to the latter. In considering the last 11 cases, one would be inclined to regard these surgical operations in the nature of a salvation, but unfortunately we must not lose sight of the first 18 cases, in which the results were not good. And if I were asked to give the indications for curettement I would not be able as yet to state them accurately, in spite of the fact that many laryngologists have studied the subject for over a decade. An important factor is that we are still unable to observe or appreciate the extension of the tuberculous process to the invisible portions of the larynx, or the contiguous parts, or otherwise to form an idea of its progress, which is governed by laws as yet unknown to us. As for me, I always regard such intervention as an experiment, and leave the decision to the patient. We learn, therefore, from the above statistics, that while we have been able to effect some excellent results, we have not been spared marked disappointment in a large number, and, indeed, in the majority of cases."

This was my standpoint somewhat over a year ago. I therefore resolved to try for one year without curettage. There were several cases in which, according to former views, curettement was indicated. Although I was tempted to do it repeatedly, I abstained, and after a year's trial without curettement, I believe my patients are just as well and perhaps better off than they would have been with the operation. Whether in the future I might not come across any cases in which it will be indicated, I can not say. My present view may be illustrated by the following case.

M. G., 49 years of age, a waiter, had been four years in the United States. His father died at 46, of some sudden throat illness, his mother at 58, of pneumonia; two sisters, two brothers and his wife and children are all well. He was well up to three years ago, when he had a chill, and on the following morning could not talk above a whisper. Last winter he began to cough and expectorate; no pain, but could not eat; had night sweats; has lost thirteen pounds in the last four months.

Sept. 20, 1899, there was extensive dulness over both upper lobes; exaggerated respiratory murmur; here and there moist râles. The left, anteriorly, in a limited area, showed slight bronchial breathing; there was whispered voice, the sounds not increased. The heart sounds were somewhat accelerated.

3. Phila. Med. Jour., March 25, 1899.

The sputum contained tubercle bacilli. The patient had had repeated hemorrhages.

When my service commenced, on January 1, he had outspoken tuberculous laryngitis, especially infiltration of the left ventricular band. This infiltration was so marked that it covered the whole vocal cord. There were superficial ulcerations on the left aryepiglottic ligament, and the patient had considerable dysphagia. He received injections of orthoform-menthol emulsion, first only once a week, then twice weekly, and felt very much improved. During my temporary absence from the service he did not get the injection, and felt worse. His condition improved as soon as I resumed the treatment. No ulcerations were to be seen, but he felt better after the injection.

Now, after five months' treatment, the patient is in such a condition that he very rarely complains of pain. The infiltration is so much less that the vocal cord can be seen; there are no ulcerations, and the thickening of the left aryepiglottic ligament has disappeared. The patient would not think of submitting himself to operative interference, and I am of the same opinion. There is a great possibility that if we stopped with the orthoform-menthol emulsion his pain would return, also his irritating cough, and through that probably ulcerations and infiltrations (?) too. But as long as these injections can be administered so easily, why discontinue them? Why try anything else?

There is one point I can not emphasize enough, viz., to make these injections carefully. If one is in a hurry and injects the whole syringeful at once, in most cases a coughing spell will set in, and bring up all the emulsion. This will occur even when the preliminary anesthesia of the larynx with the suprarenal gland has been effective, as much of the emulsion goes down into the trachea. But if one is a little careful and injects the emulsion slowly, it will adhere to the surface, and the good results will surely appear.

Treatment with Oil.—There are some patients, however—and luckily they are the exceptions—who can not stand anything, be it cocain or anything else. They gag at the slightest provocation, or they vomit just as easily. These are patients who lack the smallest particle of energy, or who are exhausted from a very long illness, and near the end. For this class I have tried olive-oil.

Last year Paul Cohnheim, an assistant of Boas, of Berlin, reported the case of a man with ulcus ventriculi. This man, on his own account, had for weeks taken large doses of linseed-oil, and was thus cured. The oil worked like a grease—lubricant—by diminishing or abolishing the friction. We see this, as Cohnheim correctly says, in other parts of the body, too, as for example in the urethra and anus. Just as easily as large masses of feces pass the anus with comparative ease, even in the presence of rhagades or ulcers, so does food pass the oiled stenosed pylorus. Rosenheim applied this treatment in carcinoma of the esophagus, with surprisingly good results; also Boas and Akimo-Peretz saw good results. The latter gave 50 to 100 grams of an emulsion of oil of almonds daily before each meal.

I read all this only a short time ago, and it occurred to me that by lubricating the esophagus with any oil the food ought to pass more readily through that difficult place behind the infiltrations or ulcerations of the larynx, thus partly, at least, relieving the dysphagia. The first case treated in that way was that of M. Y., 34 years of age, a salesman. He was suffering from advanced tuberculosis of the lungs, and complained of great dysphagia and ulcers of the tongue. He was so weak that he could hardly sit up. An examination of the larynx was impossible, as he had too much pain in holding out his tongue. Insufflations with the suprarenal gland, or injections of the menthol-orthoform emulsion, or even cocain, were useless, as he vomited up everything. I therefore tried to improve his lingual ulcerations first. These were situated on and around the tip of the tongue. They spread especially on both sides, and under the tongue at least an inch in each direction. There was no diabetes nor any specific infection. In this case even the concentrated lactic acid had been used before he entered the home, with no good whatever. The application of the menthol-orthoform emulsion had the same negative result, and I am almost inclined to believe that orthoform has very little effect on the tongue, but as yet I can not judge sufficiently in that respect, as these cases are rare. At any rate, he did not improve, and as an experiment I gave him a glass of olive-oil one-half hour before his breakfast. After four days he said he could swallow a little easier. I now had 10 per cent. nitrate of silver applied to his tongue, and injected, into the larynx, a few drops of the menthol-orthoform emulsion, which he retained. The olive-oil was continued, and three days later he again felt better and I was able to examine his larynx. There were deep ulcerations on the epiglottis, and both aryepiglottic folds. The vocal cords were irregular and ulcerated. His tongue improving but slowly, I again tried lactic acid for it, but if anything it made it worse.

These cases of lingual tuberculosis are not frequent, and I just recall one case by C. E. Bean, of St. Paul.[4] He says: "Lactic acid has been very much vaunted, and one or two cases are reported as having been cured by means of this remedy, well rubbed into the ulceration; but the numerous failures to even afford temporary relief seem to demonstrate the fact that it is no more to be depended upon when the disease is situated in the tongue than when it has been developed in the larynx; and the result of treatment in that location has been disappointing." My experience is about the same. I can not report much more about the patient, except that within a few days he could swallow a little easier, and that he left for Europe.

The next case I treated with olive-oil was a private patient: N. O., 48 years of age, a business man. Eighteen years before he had acquired syphilis, and for four years had had tuberculosis. He complained only of great dysphagia, and the conditions were about the same as in the previous case. He rejected everything, and an examination in his bed was impossible. I ordered one glass of olive-oil every morning, which he took with great reluctance. After five days the house physician reported to me that there was some improvement in swallowing. I then saw him three days later, and after taking the olive-oil with great disgust he felt much better, as he had been able to take quite a little nourishment. As he had now decided to leave for the country I did not make any further trial with orthoform, etc., but advised him to continue for some time with the oil. At this last visit I saw in the larynx all the symptoms of advanced tuberculosis. A few weeks later I heard that his dysphagia was improving steadily. In the two other cases treated with olive-oil, I did not see any improvement whatever, and I shall not report them in detail. However, I consider it just, in suitable cases, to give this a further trial, and shall do so in the future.

Phototherapy.—The last of our resources in treating laryngeal tuberculosis is phototherapy, or treatment with the electric or sunlight. I have had some results

4. Bean, C. E.: Report of Two Cases of Buccal Tuberculosis, N. Y. Med. Jour., Sept. 14, 1889.

with that treatment, but I have not reached any final conclusions in regard to it. However, I shall publish all my experience in phototherapy in the near future.

Heroin for the Cough.—And now one word about the bronchial cough in these cases. Among the most distressing symptoms of laryngeal tuberculosis is the concomitant bronchial cough, which is often of a most harassing character, and contributes materially to the patient's exhaustion by preventing rest at night. For its relief we were formerly forced to rely on morphin and codein, although both these drugs left much to be desired. Aside from its well-known after-effects, morphin is particularly objectionable because of its tendency in many instances to disturb the digestive organs, and thus impair the patient's appetite. Codein, while in general preferable to morphin, has the disadvantage of being uncertain and unreliable in action. The introduction of heroin has been a decided advance in the treatment of cough in phthisical cases. In an article on the "Treatment of Dysphagia and Cough, Especially in Tuberculosis,"[5] I have reported my preliminary results with this new drug, which were most favorable. Since then its continued use has given very satisfactory results. The irritable cough in tuberculous patients frequently yields to the administration of heroin, and this occurs in cases in which both morphin and codein have proved completely inefficient. The action of heroin in modifying the respirations by diminishing their frequency and increasing their force, renders the breathing much easier. Aside from some lassitude and slight constipation, I have never observed the least after-effects from heroin, and as my experience relates now to several hundred cases in dispensary and private practice, I feel convinced that the drug is perfectly safe when used with ordinary precautions. In several instances, however, the constipation was sufficiently marked to call for the administration of laxatives, such as extract of cascara sagrada and aloin. My observations in this respect are in accord with those of Einhorn, Manges, and others, who have reported their results. Although we can not be sufficiently conservative in admitting to our confidence any new remedy which claims our attention, my experience with heroin has now been so extensive that I have no hesitation in assigning to it a prominent place in the list of medicaments for the relief of cough.

In summing up my experience with tuberculous laryngitis, I should like to emphasize the fact that there is a pathologic condition which might justly be called pretuberculous laryngitis. This ought to be treated with great care in every consumptive patient. Regarding the treatment of laryngeal tuberculosis we are nowadays fortunate enough to give great relief to by far the majority of these patients. Of these remedies which are so potent, I should like to mention: 1. The saccharated suprarenal gland for the induction of preliminary local anesthesia. 2. The menthol-orthoform emulsion for the production of a longer local anesthesia, and for its curative effects. 3. Olive, almond or sesame oil for the relief of the dysphagia. 4. Phototherapy. 5. Heroin for the relief of bronchial cough. Lactic acid ought to be dispensed with as antiquated and barbarous torture to the patients. Finally, I would like to say that here is a large field for further fruitful investigations in which every one ought to be interested; and the more we work in this field the more relief we shall give to our patients and the more cures we will effect.

5. Phila. Med. Jour., March 25, 1899.

DISCUSSION.

DR. EMIL MAYER, New York City—I would like to endorse the use of orthoform for this particular condition, and would call attention to the preparation with the white of the egg, for which I believe Dr. Freudenthal is responsible; that makes a very stable preparation and one that is valuable. I have found orthoform mixes very well with some of the liquid vaselin preparations, such as benzonol, and I have used that sometimes when the emulsion was not to be obtained. It may be said also that orthoform is not only of use for the painful deglutition that is associated with the tubercular trouble, but also in those conditions following operations. Nothing will give your patient so much comfort after a tonsillotomy as this emulsion.

DR. HOLBROOK CURTIS, New York City—One thing brought out was the use of the suprarenal extract. I reported, a few months ago, my first case, and I have now three using the extract for painful deglutition, and with most remarkable results. It has at the same time a most excellent effect on the edema. I have also used the suprarenal extract in quinsy and edema of the glottis with remarkable effect. I think it will prove of great value.

DR. RICHARDS—I would like to ask Dr. Freudenthal whether this solution can be sprayed through an atomizer.

DR. FREUDENTHAL—Not this solution; I use it with an ordinary laryngeal syringe.

DR. W. FREUDENTHAL—I am glad Dr. Mayer had the same experience as I did, and I shall try this solution in benzonol, which I think will be very good. I have not used this emulsion for tuberculous cases alone, but I have used it in syphilitic cases as well. In a case that came to me recently I injected this solution for severe pain, and the patient experienced almost immediate relief. The effect on edema is very good, which is due largely to its action as an astringent.

TREATMENT OF ATROPHIC RHINITIS BY ELECTROLYSIS.

AND SOME EXPERIMENTS TO DETERMINE THE EFFICIENCY OF NEEDLES OF DIFFERENT METALS.*

CAROLUS M. COBB, M.D.

BOSTON, MASS.

Atrophic rhinitis has been the bane of the rhinologist since the diseases of the nasal mucous membrane began to receive special attention. It is not at all surprising that the disease remained incurable during the time in which the diseases of the upper air-tract were treated by the ophthalmologist or otologist as a side issue to what he considered of more importance. Not only this, but most other diseases of the nasal cavities were considered incurable, not alone by the laity, but by the profession as well. This is hardly to be wondered at when we remember that the treatment of the different diseases of nasal cavities was much the same and consisted in the use of a spray and the application of a solution of nitrate of silver to the surface of the nasal mucous membrane or to such part of it as could be easily reached. The patients were given a spray to use at home, and I think that they accomplished as much by its use as was accomplished by the physician himself. These sprays were usually composed of varying combinations of alkalies, and each specialist had a formula of his own which he was only too apt to think was a specific. In the use of watery sprays the fact that the nose was made for the passage of air and not for water, seems to have been overlooked. That these sprays gave temporary relief, but did not cure, was at last recognized by all, and while it may be necessary for the physician to occasionally use a spray for cleansing purposes, I am inclined to think it is well for the patient to cleanse his own nose as a rule.

The medical sprayer, if you will allow the expression, did not cease to exist when he found that sprays did not

* Presented to the Section on Laryngology and Otology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

cure nasal disease, but the argument was changed and he frankly admitted that the so-called catarrhal diseases were incurable in this climate—it made no particular difference where he might be, one place was too windy, another too dusty, another too cold, in another the climate was too variable, etc., ad nauseam—but if the patient will use this spray, the disease will be prevented from growing worse. This advice was given to all patients, but more especially to those who suffered from one of the most horrible of the diseases of the nasal cavities, horrible not from disfigurement or from danger to life, but from the persistent and almost unbearable odor which accompanies it. In this disease it would seem that a spray might be of some use, and it undoubtedly is of some slight benefit, but there is usually not enough of it in volume or force to dislodge the crusts, and if the patients rely on the spray for treatment they are condemned to live with this disgusting odor always with them, an object of aversion to themselves and avoided by their friends. Fortunately they early lose the sense of smell and in this way are relieved of a part of their burden.

To cure this disease confers as great an obligation on these patients and their friends as the cure of any other loathsome disease. With the zeal born of specialism, earnest, intelligent men have set themselves the task to accomplish this object, and while much yet remains to do, we have already succeeded to a great extent in curing the disease. As is often the case, our treatment has outrun our knowledge of etiology, and while we are already able to cure a large proportion of the patients, we do not know as yet what part the bacteria play in the production of the disease, neither do we know how much the disease may depend upon or be influenced by the general systemic condition or by the presence of a nasal empyema, or what part the cephalic index may play as a predisposing cause. It has not yet been definitely settled whether the bacteria which are found in such numbers in the nasal cavities in cases of atrophic rhinitis are of primary or of secondary importance, and as I have nothing new to offer, I will not take your time with a review of the opinions of others on the subject. I do wish to call your attention to the importance of a close differential diagnosis between true atrophic rhinitis and disease of the accessory sinuses. That many of the cases which are diagnosed as atrophic rhinitis have their origin in a nasal empyema there is not the slightest doubt. I have seen so many cases with all the symptoms of a typical atrophic rhinitis and have found after the crust formation was stopped that there was a discharge from a nasal empyema, that I feel that the recognition of this condition can not be insisted upon too strongly. Whether the nasal empyema—when it exists—is of primary or of secondary etiological importance is a question to be decided by the physician in each case, but if we expect to be successful in treating these cases, the nasal empyema must receive attention. The diagnosis of this complicating disease is easily made. If after the nasal cavity is thoroughly cleansed we find pus appearing within a short time in one or both the pathways of the drainage from the accessory sinuses, we may feel reasonably sure that we have to deal with a collection of fluid in one or more of the sinuses. The enlarged middle turbinate which is so often found in cases of atrophic rhinitis may be the cause of a nasal empyema by interfering with the drainage from the accessory sinuses, or the cell which is contained in this enlargement may be the site of the empyema. If we are satisfied that we have to deal with a nasal empyema as a complication of the atrophic condition, we should not hesitate to remove enough of the turbinate to improve the drainage. I have removed the anterior wall of the enlarged middle turbinate, with the most gratifying results, in cases where I had reason to believe that the empyema was the cause of the crust formation. It is always well to examine very thoroughly for a possible sinus involvement those cases which follow scarlet fever, measles, typhoid fever, diphtheria and erysipelas. If a nasal empyema is found to exist it is unnecessary to add that it should be treated by thorough drainage. What proportion of the cases of atrophic rhinitis depend upon sinus disease is very hard to determine; from my own experience I should think fully 50 per cent. have this origin or are seriously influenced by this complication.

After this brief review of the most important complication of the disease, we will next consider its treatment by electrolysis. In 1895, at the meeting of the Belgian Laryngologists and Otologists, held in Brussels, Cheval announced that he had been able to cure 91 per cent. of his cases of ozena by interstitial electrolysis. This statement was received with more or less incredulity by the other laryngologists, and the method was tested very thoroughly by Bayer, of Brussels, and by many others during the next year. Bayer, who was at first skeptical, after a year's experience reported favorably, as did many others. Among the enthusiastic advocates of the method are Brindel, of Bordeaux; Rethi, of Vienna, and McBride, of Edinburgh. All observers unite in the report that there is an immediate and decided lessening of the odor and a marked decrease in the amount of crusts and that they are easily removed from the nose. The improvement often occurs after the first treatment and it rarely requires more than five or six applications to accomplish all that can be hoped for. Cheval reports that 70 patients were cured in a single sitting, 12 required several, and 3 were still under treatment. One case was improved, but not cured after six sittings. One of the most striking results of the treatment is the disappearance of all odor. This often occurs on the day of the first treatment, and it may not return for months, even though the crust formation does not entirely cease. The important question then is, For how long a time does this improvement continue? This will, of course, vary in individual cases, and may be from a few months to a year or more. McBride exhibited two cases before the British Medical Association, in 1898, in whom the improvement had lasted for a year without any return of the odor and with but slight tendency to crust formation. Brindel, while noting improvement in all, admits that it is not permanent. In the ten cases which he reports, at the time of writing there was no return of the odor or crusts, and they had been under treatment as follows: 1, eleven months previously; 3, ten months; 1, nine months; 1, eight months; 2, seven months; 1, five months; 1, three months. Of these only two could be said to be cured, that is, in which the atrophy had entirely disappeared. Hajek and Ghiari both have protested against considering these cases as cured when the odor and crusts have only been relieved, but no anatomical changes have taken place. Hendelsohn also cautions against placing too much reliance on the permanence of the cure.

If we seek for an explanation of the effect of the galvanic current upon the tissues in cases of atrophic rhinitis, we find various opinions expressed by different writers. Bayer attributes it to the effect upon the nervous system, Gautier and Javier to the deposition of a

copper salt in the tissues, Delavan to the mechanical stimulation of the tissues. If we investigate the action of the galvanic current upon living tissue we shall be able perhaps to explain the effect which it has in these cases. In doing this we must of necessity go over much ground that is perfectly familiar to you all. It may be well in the beginning to make this statement: that the passage of the electrical current, as we know it, is always destructive to cell life, that it is always and everywhere a life-destroyer and not a life-giver. If the destruction is not carried too far it may act as a stimulant and it may also have a remedial action by liberating certain elements from the tissues through which it passes or by depositing remedies in them. It is not material whether we consider the change in the cell by which this destruction is accomplished as chemical or mechanical. The galvanic current outside of the battery passes from the positive to the negative pole and when passing through living tissue carries along with it a certain amount of the basic elements of the cells, thus destroying their chemical structure. The removal of the base from the salt liberates those elements which are known as the acid-forming, and these being liberated by the current appear at the positive pole. Oxygen and chlorin are the elements that appear at the positive pole, with perhaps others in infinitesimal quantities, and they unite with the metal of the electrode and form a salt which may in turn be decomposed and the metal carried along with the current. It is evident that many things may have an influence over this electrolytic action. The first to be considered is the resistance of the tissues, which, of course, varies for the different structures through which the current passes, and while we are not able to estimate this for different tissues and perhaps different individuals, we do know that all of the current does not follow the path of least resistance; for example, if we have two substances, one of 1 ohm resistance and the other of 1000 ohms, the current will pass through the higher resistance in inverse proportion to the lesser. We have next to take account of the diffusion of the current. This is probably about equal to the diffusion which takes place when a current passes through the earth; at least we have no better way of estimating it. An electrical current passing through the earth between points one mile apart is diffused about 1100 feet each side from the center, or a lateral diffusion of rather more than one-third of the linear distance, and forms an almost perfect ellipse. There is a large conducting area for the current as soon as it leaves the needle, and, further, the current does not all pass from the needle on the side toward the other pole, and in the use of electricity in the treatment of disease it is rarely possible to place the two poles in the most favorable position to obtain least diffusion. It would seem to follow from this that the best results would be obtained when it was possible to concentrate the current, and this has been the result of experience in other branches of medicine.

After this brief allusion to some of the factors which influence electrolytic action in the tissues of the human body, we will now consider the direct effect when a positive electrode of copper or other metal is used. If a copper needle is used for the positive pole, we should expect to have formed an oxygen and chlorin compound of copper, and this was the salt that Cheval and Bayer found, by chemical analysis, deposited on the positive pole. If another metal is used—with the exception of platinum, which is not affected by the gases liberated by the electrical current—we should get a salt with the metal used as a base. It has been claimed that the oxychlorid of copper is soluble in the lymph plasma, and some writers think that the beneficial results are obtained by the diffusion of this solution of the oxychlorid of copper through the tissues. We will speak of the solubility of this salt in connection with the inquiry into the amount of copper salts which may be obtained by electrolysis. It is interesting to inquire how much of this salt is deposited in the tissues during an ordinary treatment by electricity. According to Park Benjamin, one ampere flowing for one hour would liberate 1 1/10 grams of an —ic salt, or 2 3/10 grams of an —ous salt. It is quite probable that the salt formed in the tissues is a mixture of the two, and we will call it, speaking roughly, 20 grains of the combined salt. Twenty milliamperes, which is a very liberal dose of electricity, would therefore liberate one-fiftieth of 20 grains in one hour, and in ten minutes, the usual length of the sitting, one three-hundredth part of 20 grains or one-fifteenth part of 1 grain. To deposit 1 grain of a mixed salt of copper in the tissues would require one hundred and fifty minutes, or two and one-half hours. These figures are, of course, not absolutely accurate, but are approximately so. In this connection it is well to call attention to the question of the solubility of the oxychlorid of copper which is found deposited upon the positive pole. In Roscoe's chemistry several oxychlorids are given. He notes the most common one, which is known in commerce as Brunswick green. The oxychlorids are evidently varying mixtures of the oxid and chlorid of copper, which would, in the presence of a saline solution like the lymph-plasma, break up and the chlorid salt would be dissolved, the oxid remaining in an undissolved condition. The fact that Cheval was able to remove enough of the oxychlorid of copper from the copper needle for chemical analysis would seem to indicate that the salt which is formed upon the surface of the copper needle is insoluble. It will be seen from the varying chemical and electrolytic conditions which may influence the deposition of a salt of copper that it is manifestly impossible to determine the amount which would be left in the tissues during an ordinary treatment by electrolysis, but we may be sure that under the most favorable conditions it would be no more than the amount which I have given, and it is probably less.

It does not seem as though the deposition of an infinitesimal amount of a mixed salt of copper in the tissues could produce the immediate and lasting results which follow the interstitial application of the galvanic current; and while it is not claimed that even the small amount of copper which it may be possible to deposit possesses no remedial properties, I have not been able to detect any difference in the results when either copper, silver, steel or platinum needles were used as the positive pole, or when both poles were of the same metal. I will not weary you by giving any detailed case histories, but will simply give the summary of the cases treated: Whole number of cases treated, 15; those in which the nasal empyema was of paramount importance, 8; number treated by copper and platinum, 2; by steel and platinum, 1; by silver and platinum, 2; by platinum and platinum, 2. I took the cases in rotation from my clinic and private practice, and I am fortunate in being able to report an equal number treated by the different electrodes, except the steel. I have not included those cases where the sinus disease predominated, because I not only used electricity, but improved the drainage as well, and in some of the cases repeatedly

washed out the affected sinus. I do not feel that it would add to our knowledge of the value of electrolysis as a remedial agent in the treatment of atrophic rhinitis to include the good results obtained by measures directed to the relief of the nasal empyema. Of these seven cases of atrophic rhinitis, four were relieved of the odor and crust formation in one sitting, two in three sittings, and one in five. Two of them have remained free from odor and nearly free from crust formation for fourteen months, three for eleven months, one for eight months, and one had a return in a little over two months. The cases of nasal empyema were all very much benefited by the improvement in the drainage and the washing out of the cavities involved, but, as often occurs in the treatment of nasal empyema, the discharge was not entirely stopped in all of them. There is one point that should not be neglected, namely, that the improvement in the crust formation may improve the drainage from the accessory sinuses to such a degree that the nasal empyema which is an accompaniment, if it be not a cause of the crusts, is made permanently better.

I have gone very fully into the question of the deposition of copper in the tissues because I believe it is well to know, when it is possible to do so, to what to ascribe the results which we obtain by any method of treatment. It now remains for us briefly to consider the question of the mechanical stimulation of the tissues and the effect upon the nervous system of interstitial electrolysis. The mechanical effect of the passage of the galvanic current through the tissues of the body may, for all practical purposes, be considered as nothing. Even if the current produced decided mechanical effect, this would not explain the results obtained by this method of treatment, for it is a well-known fact that other forms of mechanical stimulation have to be repeated at short intervals and for a considerable length of time; for instance, those who use vibratory massage in the treatment of atrophic rhinitis recommend that it be used every other day for three months, and then at longer intervals for several months more. There is every reason to believe that the galvanic current is an irritant to the nerves when it is brought in contact with them, but this irritation lasts practically only so long as the contact exists and it hardly seems possible that the application of the galvanic current would produce such lasting results. I am very well aware that the use of electricity is vaguely supposed to be beneficial in the treatment of nervous diseases, but I think that I am stating what is the general opinion of the leading neurologists when I say that, with one exception, the use of electricity is confined to diagnosis and not to treatment. The exception is the use of the faradic current in the treatment of some forms of muscular atrophy and the unanimity of opinion in regard to its use shows very conclusively that the faradic current is not of benefit in other conditions. The action of the faradic current has been defined as a mechanical massage, and this definition explains the results obtained by its use. If the action of the galvanic current in cases of atrophic rhinitis can not be attributed to any of the theories given, to what then is it due? If we go back to the explanation of the effect produced by the passage of the galvanic current we shall find that it breaks the chemical combination of the cell by its power to attract the basic elements and that they appear at the negative pole and that it repels the elements that are known as the acid-formers and that they appear at the positive pole. The effect of a current which produces therapeutic results must be the same, only to a less degree, as that which is produced by the larger volume of current. If the destruction of the tissues of the body by the galvanic current is mechanical, then the therapeutic effect is the result of mechanical action, but I think no one claims that this is so. As I said earlier in this paper, the passage of the electrical current always produces the same result, the destruction of the cells, and this is only modified in degree, but not in character, by the amount of the current which passes, and by the force which drives it through the tissues. Between the large volume of current which produces extensive destruction of tissue and the very weakest, which is practically inert, lies the therapeutic use of the galvanic current. The action of the current is probably mostly confined to the soft parts, as the periosteum is a poor conductor of electricity. In the chemical destruction of the cells of the soft parts, the weakest cells are destroyed first, and this occurs in two ways: 1, by the direct action of the current, and 2, by the action of the acid-forming elements which are liberated around the positive pole. That the bacteria are also destroyed by the same action, the examinations of Bayer would seem to indicate, as he found that the number of colonies was very much reduced after treatment by electrolysis. The source of the oxygen and chlorin which are liberated around the positive pole is very largely the lymph-plasm; this is composed of over 90 per cent. of water, holding in solution albumin, fibrin, fatty matter, extractive matter and salts of sodium, potassium, calcium and magnesia. Of these various salts, sodium chlorid occurs in the greatest quantity, being 65.2 per cent. of the inorganic salts. From this brief review of the chemical composition of the fluid upon which the galvanic current must have the greatest effect, it will be readily seen from what source the oxygen and chlorin are obtained which are liberated around the positive pole. The water and the chlorid of sodium are broken up into their constituent elements by the action of the electrical current. If an electrode of platinum is used on the positive pole the oxygen and chlorin thus liberated are free to unite with the tissues; that they remain free in the tissues or that they escape does not seem probable when we remember the avidity with which these elements unite with others to form new combinations. While these substances are formed in minute quantities, still the effect may be, and undoubtedly is, considerable. The destruction of the cells and the liberation of oxygen and chlorin around the positive pole, which unite with the other elements to form new combinations that may be, temporarily at least, acid in reaction, in my opinion, is the explanation of the results obtained in the treatment of atrophic rhinitis by interstitial electrolysis. The effect is local, and in some cases immediate, the odor and crust formation often disappearing on the day of the first treatment; and coincident with this result is the change in the character of the secretion which, from being ropy and sticky, becomes liquefied and easily removed. This would tend to prove that there was a change in the chemical reaction of the tissues, or at least of the secretion, produced almost at once.

Many of the writers advise placing the needle of the negative pole beneath the mucous membrane of the septum; I do not consider this a safe procedure, for the reason that the sodium and potassium which are liberated around the negative pole are active escharotics and are liable to cause the destruction of considerable tissue, and may even cause perforation of the septum. There can be no doubt that we have in interstitial electrolysis a remedial agent of undoubted efficacy and that

we may confidently expect from its use, in a large percentage of the cases at least, that the odor will cease, that the crust formation will be lessened, that the nasal mucous membrane will become moist and healthy in appearance, and that the secretion will become liquefied and lose its ropy, sticky character, and that these results will last for several months. It is needless to add that this is a more favorable showing than can be secured by any other known method of treatment. Electricity will not stop the discharge when this depends upon a nasal empyema, although it may have a beneficial effect upon the crust formation even in these cases; neither will it stop the odor when that depends upon the same cause. The conclusions to which I wish to draw your attention are:

1. Electrolysis has a curative action in atrophic rhinitis in so far as it stops the tendency to crust formation and the odor, in typical cases.

2. It does not stop the discharge or the odor if these are caused by nasal empyema.

3. That better results are obtained if the needles are placed comparatively near together.

4. That it makes no difference in the result what metal is used for needles, and it therefore follows that the diffusion of the copper salt is evidently not the curative agent.

5. That the improvement in the condition of the nasal mucous membrane is most noticeable in the area around the positive pole.

6. That this improvement is probably due to the liberation of oxygen and chlorin, and the chemical change resulting from the presence of free oxygen and chlorin in the tissues or the acid reaction produced thereby.

7. That the needle of the negative pole should not be placed beneath the membrane of the septum.

I wish in closing to acknowledge my indebtedness to Dr. C. L. Sopher, of Wakefield, Mass., for his valuable assistance in collecting electrical data for this paper.

419 Boylston Street.

DISCUSSION.

DR. J. F. CULP, Harrisburg, Pa.—I was very much interested listening to Dr. Cobb's paper this morning. There is one thing he did not mention, that is, the unpleasant effect following the application of the electric current in the treatment he mentioned. Such effects are sometimes even more than unpleasant. I have personally seen this method tried and violent headache follow its application. I have seen very decided earache, and I have heard of decided syncope following the application of the current. In regard to the statistics attending this method of treatment, some of them are fallacious, for I personally know of cases that have been reported as cured, and in which the physician has spoken in the highest term of the cure, that have relapsed in a very short time after the publication of the paper reporting them. Undoubtedly there is very much in the treatment, and I think I express the opinions of some of the other members of the ASSOCIATION when I say I would like very much to hear a little more of the detail of the application of this method of treatment.

DR. EDWARD PYNCHON, Chicago—A good idea is that of having the patient attend to the cleansing part himself. I have done this, and am not afraid of having the patient use the douche twice a day, at first, perhaps, with a solution of phenol, and afterward with bicarbonate of soda, a teaspoonful to a pint. I also insist on his sniffing, every hour, a small quantity of an alkaline solution, perhaps a one-half strength of the Dobell solution. In this way I have had no trouble in controlling the ozenous condition in atrophic rhinitis or in sinus disease. In connection with the atrophy, there is almost invariably present a hypertrophic condition of the middle turbinal upon the same side, and I have had very satisfactory results by early surgical treatment of such hypertrophied body. One thing which keeps up the condition of atrophy is the fact that there is an increased current of air in the lower part of the nose, as it can not circulate in the upper part of the nose owing to the occlusion thereof.

DR. C. M. COBB, Lynn, Mass.—In regard to the strength of current and the details and unpleasant symptoms that may result, and last but not least the duration of the cure, no one claims that these cases are permanently cured. In many instances they will stay in a reasonably comfortable condition for months. If they have been using any wash or cleansing spray at all they are very likely to keep using it, and that will often deceive you as to how much you have done. I invariably tell them to do nothing with the nose, that they may blow the crusts out, but that they should not use any spray. The treatment simply prevents any secretion sticking to the mucous membrane. Whether there is just as much secretion, or whether there is more I can not say, but it does not stick and form crusts. I use a platinum needle, which is not easily affected and is easily kept clean, and does not form any oxid or other salts. One little point is that you must keep the needles apart in their course, for if you get a short circuit before the current gets into the tissues you will not get any effect. I use a rheostat like the one used by dentists. I never use an amperemeter because it is not possible for the instrument-makers to make an accurate milliamperemeter at the price they charge for them. They are approximately correct, that is, some of them are and some are not. But if you have a rheostat so you can control the current, and then turn the current on until the patient is sensible of it you will not be likely to use too much current and cause headache. Another thing, if you introduce the needles into the bone of the middle turbinated you are much more likely to give a shock to the patient. I think the nasal speculum of hard rubber is a great advantage. I have a patient under treatment, and when he asked why I did not use the battery on the other side I told him that my battery was out of order. He perhaps thinks that it is a long time being fixed, but the truth is, I wanted to see how he would do without the use of the battery. You know some believe that the treatment affects not only the side to which you apply the current, but also the other side and the pharynx as well. I do not think that this is true. In the case I have mentioned the man has one side comparatively comfortable, while the other side, to which the current was not applied, is about the same as it was before. Dr. Pynchon mentioned hypertrophy of the middle turbinated. In those cases I remove the anterior part of the middle turbinated, and it is wonderful how much of the atrophy supposed to exist in the lower turbinated disappears. The nose becomes moist and the patient is more comfortable. It is not necessary in these cases to remove the whole turbinated, but if you will cut a good sized section out of it you will improve the case in every way.

THE NATURE AND TREATMENT OF VERTIGO.*

J. LEONARD CORNING, A.M., M.D., LL.D.

NEW YORK CITY.

Among the various consequences of organic and functional disturbance of the nervous system with which we are called upon to deal, what is technically known as vertigo is surely one of the most common. Often insidious in its advent, obscure as to ultimate pathology, in its treatment baffling, it has come to be regarded as a most slippery adversary, a kind of ignis fatuus of the clinic, at the view of whose antics and illusive ways erudition and experience stand aghast.

Yet despite the unsatisfactory condition of present knowledge, there is no denying the eminent practical importance of the subject. Consider for a moment the amount of apprehension and annoyance caused by the symptom itself; then its frequency, as an accompaniment or sequence of the most disparate pathological conditions, and you will concede, I think, that a warrant is provided, sufficient to justify a careful sifting of available data, an analysis of which may incite, perhaps, to the formation of a more consistent concept of the phenomenon itself, and hence to more rational management.

Besides the more common forms of vertigo described in the books: that which accompanies disorders of the

* Presented to the Section on Materia Medica, Pharmacy and Therapeutics, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

stomach; that due to lithemia—the most common of all, in my experience—that associated with disease of the inner ear—Ménière's disease—that found in chlorosis and other forms of debility, and notably in neurasthenia; that traceable to ocular difficulties; and that associated with epilepsy, toxic agencies externally or internally derived, etc., the more conventional varieties; there are many others, less commonly regarded, notably those associated with cerebral and cerebellar disease; compression of the medulla oblongata; multiple sclerosis; meningitis; spinal concussion and oculomotor paralyses.

To enter into a discussion of these individual varieties would quite transcend the limits and objects of the present paper, involving as it would the citation of an enormous array of collateral symtomatology—the symptomatology of the various diseases of which vertigo is but a single, albeit an important, symptom.

I speak advisedly of vertigo as a symptom, for the very good reason that, as you all know, there is no single lesion which may be regarded as peculiarly that of the affection itself.

Disparate, however, as are the conditions which may give rise to vertigo, I am confident that their ultimate effect upon certain important cerebral faculties must be practically the same. And, if called upon to say in few words in just what—psychologically speaking—the essence of vertigo consists, to define as far as may be the condition of the mind during vertigo, I would state that general or special perception is more or less perverted, and consciousness diminished in scope and alertness, whereby the faculty of orientation possessed by the individual—that faculty by virtue of which he is able to keep accurately informed respecting his relations to his environment—is manifestly impaired.

This statement of the author is not, however, to be received as an attempt at infallible utterance touching a matter of conceded complication; but is rather to be regarded in the light of a thesis whose tenability he will endeavor to defend by such facts and arguments as he is able, at this time, to bring forward.

In the first place, then, it were well to remember that those ganglionic mechanisms of the brain most intimately associated with perception may suffer derangement in two ways:

1. They may undergo more or less direct derangement from adverse potentialities acting within the cranial vault. Derangement of the cerebral circulation, septic influences and intracranial disease, are such causes.

2. The perceptive mechanism may be interfered with by adverse potentialities acting through the afferent nerves.

Let us consider first some of the data bearing on the second eventuality. When a person, seated in a revolving chair, is rapidly rotated he will experience, either during the continuance of such rotation or immediately upon its cessation, the characteristic symptom of vertigo. The occurrence of the phenomenon is not, however, due, as one might imagine, to the operation of the centrifugal force called forth by the rotation of the chair, but is to be ascribed largely if not entirely to the chaos engendered in the faculties of perception—general, and special also, if sight and hearing are operative—by the rapid and unusual change of place by the person experimented upon. I have been able to prove the truth of this proposition by reversing the experiment. Placing the subject in an armchair, I caused a cylindrical screen of white cloth 7 feet in diameter, suspended by a swivel from the ceiling, to rotate around him, with results identical as to character, but somewhat less in degree.

In a word, vertigo usually supervened either during the rotation of the screen or immediately upon the cessation of such rotation. Naturally, such vertigo was only called forth when the eyes were open and the gaze fixed upon the rotating screen. Nor, as intimated, was it as intense as in the preceding experiment, when the subject himself was rotated; and for the very good reason, that under the last named circumstance—when the eyes are open—not only is common perception—muscular sense, etc.—but visual perception as well thrown into a condition of disarray, so that correct orientation on the part of the ego touching the topographical relations of the subject to environment is no longer possible. Surely, there can be no doubt as to the truth of deduction thus experimentally derived. Now, to take up the first eventuality—that in which vertigo is produced by intracranial causes—we find the phenomenon induced—the vertigo corresponds in all respects with that induced by the revolving chair and the revolving screen. There remains, then, no other conclusion possible than that phenomena thus identical must ultimately have a common origin. That common cause is perversion of perception, a perversion brought about in the one case through potentialities acting through the afferent nerves; in the other, by morbific elements acting upon the brain itself.

Concerning Certain Further Modifications of the Mental Faculties which Accompany Vertigo.—While, as previously shown, the proximal cause of vertigo is to be found in derangement of perception, this by no means represents the full extent of the psychical disorder. In all degrees of vertigo, but especially so in the severer ones, consciousness is always more or less impaired, such impairment being obviously the direct result of secondary confusional states engendered by the faulty percepts. Yet, while to the average physiological psychologist this secondary influence is certainly thinkable, there are—or were—not wanting some who obstinately held to the idea that in the milder forms of vertigo, at least, there was no impairment of the vividness of consciousness, nor of that alacrity of mind inseparable from vivid consciousness.

To set this matter at rest once for all, I determined, some time ago, to artificially induce rotary vertigo—the most typical form—and by noting the reaction time during the persistence of the vertigo, possess myself of infallible data on which to base a judgment.[1]

For the purpose of carrying out these investigations I designed and made use of apparatus, whose principal features are these:

An arm-chair (Fig. 1, *a*.) is supported in the center by a steel shaft, about two feet long, pointed at its lower extremity, to serve as a pivot. The shaft, at its upper end, immediately below the seat of the chair, passes through a steel ring, which receives support from a framework of iron bars (*b*); while, at its lower or pivoted extremity, a steel socket, set in the wooden cross, which serves as a base, affords the necessary fixation. Four feet from the chair, and appropriately supported by iron braces, is another shaft of steel, pivoted in like manner to that previously described, and surmounted by a wheel, provided with a crank handle (*c*).

The steel shaft supporting the chair and that surmounted by the crank wheel are provided, at their lower ends, a few inches above the wooden base, with sprocket-wheels, which in turn are connected by a stout chain.

1. A preliminary report of these undertakings may be found in an illustrated article, published in the New York Medical Journal, Sept. 7, 1895.

From this disposition it follows that by turning the crank handle (*c*) it is possible to rotate the chair (*a*) at such speed as the exigencies of experimentation may determine. To enable the occupant of the chair to transmit the return signal to the recording apparatus (Fig. 3), I have devised the following arrangement:

Upon the cross-bar (Fig. 2, *e*) are fastened six stout copper springs *f*, which are, in turn, connected with an equal number of binding posts (Fig. 1, *g*). These springs impinge against six circular tracks of copper (Fig. 2, *h*) secured on the under side of the bottom of the chair. Each track is carefully insulated from its fellows, and is connected by means of a gutta-percha-covered wire with one of the binding posts (g^1 Fig. 1) on the side of the chair. From this disposition it is evident that the binding posts *g* are placed in direct communication with the binding posts g^1. Now it is clear that the recording apparatus (Fig. 3) can be attached by insulated wires to the binding posts *g*; and in the same way the simple key for returning the signal (Fig. 1, *i*) may be connected with the posts *g*. For the sake of simplicity, a resonant sound, like that produced by the stroke upon a bell (Fig. 3), may be employed to give the signal. The extra binding posts are for attaching the apparatus required for the determination of the discrimination time in vertigo. This question of discrimination time I shall, however, reserve for a subsequent paper.

FIG. 1.

FIGURE 1.

The Reaction Time and Other Psychical Phenomena in Vertigo.—As some who read this may have forgotten the precise nature of what is known among psychologists and physiologists as reaction time, a word or two of explanation will perhaps prove acceptable.

It is a matter of experimental demonstration, as well as the result of ordinary experience, that mental processes of all kinds require a certain amount of time for their accomplishment. Moreover, the length of time consumed is in the direct ratio of the complexity of the mental act. To illustrate this point, let us assume that an impression is made upon the retina of the eye, and that as soon as that impression is perceived the subject presses upon the key of an electrical apparatus and so records the interval of time between the peripheral excitation and the issuance of the same in the purposive act—the so-called "reaction time." It will be found, as a result of a series of observations of this kind conducted by the aid of appropriate apparatus, that the average time in different persons is from one-tenth to two-twelfths of a second.

If, however, instead of making a single impression of uniform character upon the retina, we make heterogeneous ones, as when red and blue are displayed in indefinite order, and the subject is instructed to press the key only when the color red appears, the interval of time is at least twice as long. This additional consumption of time is due to the fact that not only is the mind obliged to take cognizance of the impressions, but to distinguish and select from them. Hence, the use of the term "discrimination time," to designate this more complicated variety of psychical reaction. As a matter of course, it is possible to determine the reaction time to touch, hearing, and sight; but in conducting such investigations it should always be remembered that the duration of the reaction period is markedly influenced by a variety of agents which interfere with the spontaneous and co-ordinate action of the cerebrospinal mechanism, and more especially of the brain. Thus the reaction time is shorter in health than in sickness, and it is longer after the ingestion of alcohol, ether, chloroform, or other agents which retard cerebral metabolism.

It follows, therefore, that by comparing the reaction time, after we have in some such way modified cerebral function, with the average normal reaction time, we shall, by a simple process of subtraction, be in a position to judge of the extent to which we have thus influenced the course of normal cerebration, particularly in its relation to the external world.

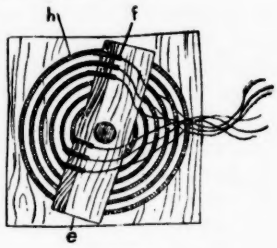


FIGURE 2.

To appreciate the wide significance of this fact, it must be borne in mind that the central elaboration implied by what is termed reaction time is essentially composed of the perception of a sensation originating from without and the formation thereupon of a definite volitional impulse.

The average values of reaction time are variously stated by different observers; in my opinion, those given by Waller are as nearly correct as any: to touch, 14/100 of a second; to sight, 18/100 of a second; to hearing, 16/100 of a second.

Various means of computing reaction time have been suggested and employed; that which consists in the use of an electromagnet, having upon its armature a pen to record upon a revolving cylinder the instant when a visual, touch, or auditory stimulus is applied, and the signaling (pressing of a key) by the subject when the stimulus is felt, is, in my opinion, the best.

As a result of numerous observations with this apparatus I have found that the reaction time in vertigo is increased to three-tenths and even four-tenths of a second, according to the intensity of the vertigo. I may add that this intensity is directly dependent upon the rapidity of rotation of the subject. It follows, therefore, that in the determination of the reaction time we have a means of ascertaining with scientific accuracy the degree of intensity of the vertigo. It would be a manifest omission were I not to mention that something may also

be learned regarding the condition of the mind during vertigo by the aid of self-observation, though only when the rotations are relatively slow, since introspection is extremely difficult, if not absolutely impossible, when the vertigo is severe.

In this way a decided diminution in the power of attention may be observed; the subject is quite unable to carry on protracted thought so far as the analysis of external impressions is concerned; yet, in spite of all this, the power of introspection, or subjective analysis, remains but slightly impaired in minor degrees of vertigo. It is, however, curtailed and even entirely lost in severe vertigo. This loss of the power of introspection is the immediate precursor of absolute unconsciousness.

Finally, the ability to perform tasks necessitating rhythmical and delicate motor co-ordination, as in playing upon a musical instrument, is lost in the severer degrees of vertigo. It is true that it is often possible to execute a series of automatic or semi-automatic acts, as exemplified in a simple scale; but to play a composition necessitating a conscious demand of memory, or to improvise, is out of the question. This point I have tested in both violin and flute players.

In conclusion, it may be said that while there is a certain obtunding of sensibility in the severer degrees of vertigo, complete analgesia appears only with the advent of total unconsciousness.

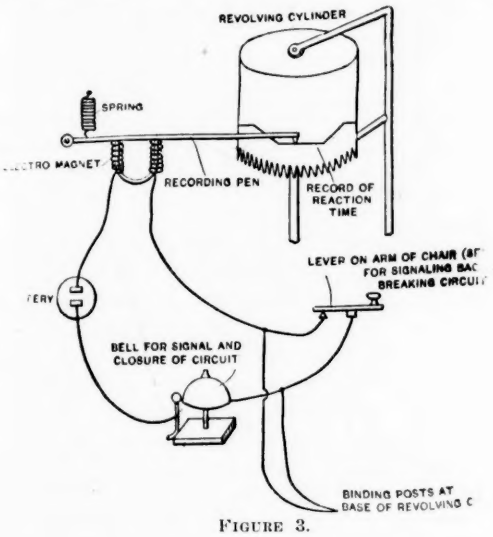


FIGURE 3.

Physical Phenomena Present in Rotary Vertigo.—But the reaction time is by no means the only phenomenon of which we are able to take cognizance by the aid of the rotary chair. In the first place, since the vertigo persists for a short time after cessation of rotation, it is possible to make some observations as to the subject's physical condition. Acting upon this principle, I was able to ascertain that in vertigo of moderate intensity the pulse, while somewhat increased in rapidity, is diminished in fulness. I have also observed a diminution in the rapidity of respiration; but this is not a constant phenomenon.

Again, when the vertigo is severe, the inhibitory effect of the brain upon the spinal cord is diminished to such a degree that reflex action, and especially the patellar tendon reflex, is decidedly exaggerated. There is likewise diminished vigor of voluntary muscular contraction, as shown by the dynamometer.

Finally, in severe vertigo there is apt to be a facial pallor accompanied by a marked dilatation of the pupils. Nausea, too, sometimes occurs, especially when the eyes are fixed upon surrounding objects. The last-named symptom may be avoided to some extent, by darkening the room, so that the surrounding objects are no longer visible. It is noteworthy, too, that when the object looked at it fastened to the chair, so as to revolve with it, nausea is much less readily induced.

Suppression of Vertigo Through the Monopolization of the Field of Consciousness by Vivid Sense Impressions, Particularly Those of Hearing.—There is one other suggestive and curious fact, which I have ascertained with regard to rotary vertigo, which I can not forbear communicating to you, before leaving the purely experimental side of the inquiry.

Knowing the importance ascribed—erroneously I think—to the inner ear as a part of the mechanism of equilibration; the thought occurred to me one day, to fasten a phonograph to the back of a revolving chair, and, connecting the instrument with the ears of the person experimented upon by india-rubber tubes, note any possible effects produced upon him by musical vibrations during the revolution of the chair.

Fancy my astonishment, when, after the very first attempt, the person experimented upon, a man of veracity and judgment, declared that, during moderately rapid rotation, he experienced no vertigo whatever. When, however, during the next experiment, I asked him to suddenly remove the tubes from his ears, while the chair was rotated, he declared that the vertigo immediately made itself felt with full intensity.

Wishing to determine whether such an inhibitory effect was alone obtainable through the sense of hearing, or whether the like might be brought about through vision, I removed the phonograph; had the subject hold an electric light of ten candle power in his hand and fixedly regard it while the chair was rotated at moderate speed.

Again, to my considerable surprise, he declared that he felt practically no "dizziness," although the inhibitory effect did not seem quite as pronounced as that obtained by sound impressions. I may add, as the result of further observations, that vertigo of moderate intensity only is thus capable of sensory suppression. Moreover, the acoustic and visual excitation should be intense in character—the musical vibrations loud, strident, the object looked at bright, dazzling.

These observations dispose utterly, in my judgment, of the old theory which assigns special importance to certain portions of the inner ear in connection with equilibration.

With regard to the suppression of the vertigo through vivid impressions of sight and sound, particularly the latter, the explanation is not far to seek. The morbid percepts engendered by rotation, that under ordinary circumstances would have culminated in the production of vertigo, are overborne by the vivid sense of impression, submerged, as it were beneath the vastly more intense percepts of sight or sound, which monopolize the field of consciousness completely.

Only when, as in the extreme degrees of rotary vertigo, the morbid percepts rise to such a degree of intensity as to defy neutralization, do the acoustic and visual impressions fail to inhibit.

From the foregoing experiments, which are unique in medical literature, and which offer indeed, the only means of scientifically determining very much about the nature of the phenomenon under consideration, I have felt justified in deriving the following conclusions:

1. That vertigo is primarily a derangement of perception, if a sufficiently expansive meaning be given to

the term to also include morbid impulses transmitted through afferent nerves other than those of special sensation.

2. This derangement of perception is, however, always accompanied by some impairment of consciousness.

3. This impairment of consciousness, as declared by the lethargic reaction-time and by introspection, is undoubtedly due to the confusional conditions engendered in contiguous centers of higher mental action—cortical centers, according to current physiological opinion—by the advent of the faulty percepts.

4. Vertigo may, however, be engendered by direct impairment of the functional efficiency of the centers of perception, without the intermediation of the afferent nerves. On this admission only is the vertigo accompanying auto-intoxication and that associated with intracranial disease to be accounted for.

5. Though the clinical causes of vertigo seem, at first view, irreconcilably disparate, they have at least this in common, that they one and all are capable of interfering either directly or indirectly (reflexly) with cortical function, with consequent impairment of consciousness.

6. To regard vertigo as essentially a cortical derangement, of either direct or indirect origin, accords, therefore, with the experimental data and is clinically explanatory.

7. Rotary vertigo—but only of the milder sort—may be more or less inhibited by vivid impressions, particularly those of sound, which outweigh—submerge as it were—in consciousness the vertigo, or rather the perverted percepts, which are its essential essence.

8. Finally, the impairment of consciousness, due to interference with cortical function, is in the direct ratio of the intensity of the vertigo.

Therapy.—The rather lengthy analysis, which has led up to these conclusions, has made, I fear, somewhat undue demands upon attention and time alike. I have chosen, however, rather to incur the risk of some blame on the score of prolixity than to affront scientific fitness by an empty *ipse dixit*. To have acquired, indeed, some insight into the real nature of the phenomenon we are considering; to be able, hereafter, to replace crass empiricism by rational management; to acquire, in a word, some mastery in what is concededly a baffling field, has seemed to me well worth the trouble it has cost.

If there is one thought more vividly suggested by these researches than any other it is this: That in so far as the abatement of the symptom itself is concerned, the vertigo, in short, our efforts should be immediately addressed to the cortex. Only by diminution of the susceptibility of that region to irritative influences, whether from without or within—whether due to fluctuations of the cerebral circulation, or to the presence of intracranial disease, or toxic elements in the blood, or disturbing influences transmitted through the afferent nerves—only, I repeat, by obtunding the irritability of the cortex can we hope to render the supervention of vertigo impossible, or if not altogether impossible at least unlikely.

Is this deduction, derived wholly, as it is, from pure theory, capable of further and more convincing demonstration? Or to come to the point in a few words, is the conclusion buttressed likewise by the laboratory and by the clinic?

This question I have sought to answer by experimentation on the one hand, and by an inquest into the therapeutics of vertigo, due to various pathological causes, on the other. To meet the inductive exactions of the problem, I have invoked the services of a rotary chair, which has figured so prominently in the previous experiments. Determining by the number of rotations to the minute the exact degree of vertigo it was proposed to induce, I was able to compare the sensations of the subject before and after medical interference.

The first subject, a man peculiarly susceptible, was given 40 grains of potassium bromid at 8 a.m.; at 12, this dose was repeated, with the result that shortly thereafter he displayed hebetude and marked somnolence. Hereupon, having placed him in a chair, I rotated the latter at precisely the same speed as before the ingestion of the bromid; but to his astonishment and my own gratification he declared that he experienced no "dizziness." I then considerably increased the number of rotations, but without manifest effect. Since this first and quite convincing observation, I have made similar tests with moderate inhalations of ether, nitrous oxid, and with the internal exhibition of chloralamid and trional; and while the results obtained from the last two remedies were not as striking as one might perhaps have anticipated, those from the inhalation of nitrous oxid and ether were quite satisfactory, the vertigo being practically entirely suppressed while they were exhibited. The essentially complete accord existing between these results of laboratory work and those obtained in the clinic is certainly striking. Glance through the published statistics, and con over your own experience, and you can not fail to be impressed by the fact that those remedies are most effective which, by general admission, exert a pronounced sedative effect upon cerebration, upon that higher mentalization which current physiological opinion regards as wholly, or almost wholly, traceable to cortical action—belladonna, opium, the bromids. Many can recall vividly enough, no doubt, cases of vertigo, whose very causation was a mystery, yet, cases nevertheless, in which these remedies, empirically administered, perhaps, and without even a pretense of analysis, served completely. It is, of course, not to be forgotten that what we are here principally concerned with is the symptomatic management of the affection.

When, on the other hand, we attack the problem of radical cure, of eradication of the exciting cause, we find ourselves immediately confronted by various and complicated difficulties, whereof the exhaustive consideration would require a great deal more space than that available in a paper of the compass of the present writing.

If there be feeble heart-action with consequent irregularity and lethargy of the cerebral circulation, you will think of nitroglycerin, strychnin, digitalis and other remedies of which they are the prototypes.

To combat those stomachic derangements which are such a common cause of vertigo, you will have a wide choice of expedients, to the use of which your broad experience and common sense will show the way. So, too, with the toxic varieties of the affection—those largely due to inefficiency of the excretory apparatus. Here, again, your knowledge of general medicine will stand you in good stead, both in arriving at a correct diagnosis, and deciding the question of diet and medication.

Sometimes, however, matters are not so obvious. Cast about with what diligence one may, the exciting cause refuses utterly to reveal itself. In such cases, careful attention to the condition of the eye and ear, especially of the eye, may bring the necessary information, with consequent enhancement of the chances of complete relief. Would that the opportunity of successfully coping with the affection were always as favorable! Unfortunately, as already remarked at the beginning of the

argument, vertigo is not infrequently the consequent of grave organic disease of the central nervous system or of important viscera—notably of the kidney and liver. Aside from the palliative treatment usual in such cases, we may profitably seek to cope directly with the vertigo itself, along the lines already fully indicated. Indeed, it is precisely in such discouraging dilemmas that a rational insight into the true nature of the symptoms will be found most useful.

53 West 38th Street.

DISCUSSION.

DR. A. L. BENEDICT, Buffalo, N. Y., said that while this paper might equally well have been read in the Section on Physiology, it is a very valuable contribution to the study of therapeutics and, therefore, appropriate. He approves of the attitude of the writer as to the organs of special sense. There has been nothing more beautifully demonstrated in physiology than that the semicircular canals are organs of equilibrium. He was astonished to hear the reader of the paper attack the accepted view as to the action of the semicircular canals, and cited, in illustration, a personal experience: Recently, during a journey, he spent part of the night in meditating on the wonderful mechanism of the semicircular canals. When he awoke in the morning he discovered that what he thought was the front of the car was the rear and that the car was going in the contrary direction to that which he had thought. Similar experiments have made him sceptic with regard to the semicircular canals. He thinks that many of our ideas of equilibrium come from the liver. For instance, in going up and down in an elevator, the feeling is referred to just below the diaphragm. He was glad that the lecturer had taken away the old view as to the function of the semicircular canals—it is a beautiful theory, but it is not well substantiated.

DR. W. B. HILL, Milwaukee, Wis., said that the reader of the paper had illustrated the fact that all treatment should be based on physiology, which alone affords a rational basis for therapeutics.

THE PHARMACOLOGIC ASSAY OF DRUGS AND ITS IMPORTANCE IN THERAPEUTICS.*

E. M. HOUGHTON, M.D.

Lecturer on Experimental Pharmacology, Detroit College of Medicine.

DETROIT, MICH.

NOTE.—The word "pharmacology" is employed as meaning "the study of the changes induced in living organisms by the administration in a state of minute division of such unorganized substances as do not act merely as foods."

After a correct diagnosis has been made, one of the most important questions to be considered by the physician is that of dosage. Especially is this true when, as often occurs, the patient's life depends upon prompt and efficient aid. But if the drugs prescribed are not of fixed and definite strength our efforts may prove utterly unavailing.

Until a few years ago we were obliged to employ pharmaceuticals of uncertain and varying strength. This variation was due not alone to differences in the process of manufacture, but also to the fact that the amount of active constituents contained in the crude drug itself varies from season to season, is modified by habitat, climatic influences, method of collecting, curing, handling, storing, etc. Where the active principles only are employed, the dose can be fixed exactly. In the case, however, of certain important drugs, such as the heart tonics, ergot, etc., a chemical assay is impossible with our present technique, owing to lack of knowledge of the active principles and of their therapeutic value, as well as to the ease with which chemical break-down occurs. Hence the question arises: "If chemical assay fails to give accurate data relative to the pharmacologic activity of a drug, by what method or methods may such information be obtained?" During the past six years I have been trying to answer this query, and desire at this time to consider briefly some of the methods of pharmacologic assay, the results obtained, and the clinical value of the drugs experimented with.

Of the many theories offered to explain the reactions between the elements of the animal body and drugs, chemical affinity seems the most plausible—the normal function of a given organ being altered in degree by the union occurring between the protoplasm of its cells and the given drug.

It is important in making comparisons of the results obtained from the administration of drugs to animals that the following be kept in mind: Since different species of animals react differently to the same drug, as they do to the same species of bacteria, it is necessary to determine by numerous experiments the type of animal best suited for the assay of each drug.

The animals employed in any pharmacologic test must be as nearly as possible of the same species, age, weight, sex, and general physical condition. The conditions obtaining in the experiments should always be constant as regards environment, food, method and time of administering the drug, length of time for making observations, reading and recording results, etc. Animals, during the time of experimentation, should be kept as nearly as possible in the natural condition. The method of administering the drug should be the one that will allow the greatest rapidity and certainty of absorption and produce the least harm to the animal.

The activity of the tested drug should be compared each time with a standard preparation which represents the active properties of a drug of average quality; the strength of the standard being determined by assaying a large number of samples obtained from different sources.

A sufficient number of animals should be employed in each test to determine the average reaction of a normal animal. Drugs should be given to animals in proportion to their weight and general physical condition. As great care should be exercised in carrying out the several steps of a given assay as in making a chemical determination.

Pharmacologic action is quantitative; in other words, the physiologic processes of the animal body are altered in degree, but not in kind, by the influence of drugs. This fact is more clearly demonstrated in healthy than in diseased subjects, the disease process or processes present often causing great variability in therapeutic results. If we could always get our tubercle cases at exactly the same stage, and if diphtheria always meant the presence of the same number of diphtheria germs, of the same virulency, and producing toxins of the same strength, etc., therapeutics would become more exact, provided our drugs were uniformly active.

Abundant evidence has been adduced to demonstrate the quantitative nature of pharmacologic reactions in normal animals. In some instances the means available for recording pharmacologic changes are more exact than in others, consequently the limits of error will be greater with some drugs than with others.

The reaction upon which to base a pharmacologic assay differs according to the nature of the drug. The minimum fatal dose, the amount of protection conferred against a poison, change in blood-pressure, general or special change in the physical condition, etc.—any one

* Presented to the Section on Materia Medica, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

of these may be in particular instances utilized to fix the standard of strength.

The following illustrations will demonstrate the reliability of pharmacologic methods as a means of determining the degree of activity possessed by a given drug. At the meeting of the ASSOCIATION in Denver, I gave in some detail a method for assaying strophanthus and the other heart tonics by determining the minimum fatal dose for frogs. Since then I have had abundant opportunity to verify the reliability of the method. Three tinctures of strophanthus of unknown strength which had been colored to exactly resemble each other were recently referred to me for assay. These were numbered 1, 2, and 3. In order to check the results obtained, three tinctures were prepared from these, as follows:

No. 4 = 5 c.c. of No. 1 + 3 c.c. standard tincture + 2 c.c. alcohol.

No. 5 = 5 c.c. of No. 3 + 3 c.c. standard tincture + 2 c.c. alcohol.

No. 6 = 5 c.c. of No. 1 + 5 c.c. of No. 3.

The following table gives the results reported by my assistants:

No. 1 = 50 per cent. reported strength of standard tincture of strophanthus (standard tincture of strophanthus = 0.00015 c.c., the minimum fatal dose per gm. for test frogs). Mogk.

No. 2 = 100 per cent. standard tincture. Mogk.

No. 3 = 150 per cent. standard tincture. Mogk.

No. 4 = 57 per cent. standard tincture. Actual strength 55 per cent. Variation 2 per cent. Hamilton.

No. 5 = 107.5 per cent. reported strength of standard tincture. Actual strength 105 per cent. Variation 2.5 per cent. Mogk.

No. 6 = 100 + per cent. reported strength of standard tincture. Variation less than .5 per cent. Hamilton.

The above table shows that two men assaying tinctures of strophanthus of unknown strength by the use of frogs are able to obtain results showing a maximum variation from the actual strength of only 2.5 per cent. Similar results have been again and again obtained by the application of this method.

Abel and other workers claim that the active principle of suprarenal glands, producing hemostasis when applied to mucous membranes, when injected into the circulation produces marked temporary rise in blood-pressure. That this rise in blood-pressure varies with the amount of extract injected is well shown in tracings Nos. 1 and 2, while tracing No. 3 gives the results obtained from investigation of a complaint that a certain shipment of glands from a packing house was not the genuine article. The tracings were obtained from the carotid artery of dogs anesthetized with chloretone. Microscopical and macroscopical examination showed that the complaint was well grounded, the glands being thymus instead of suprarenal. Here we have an instance of undoubted quantitative reaction from the administration of an animal substance to an animal. The details of this work are to be given in a subsequent paper.

Probably the most complicated of pharmacologic assays is the one with which the medical profession is most familiar. I refer to the assay of antidiphtheric

Fig. 1.—Blood-pressure tracing taken from the carotid artery of a dog anesthetized with chloretone. The suprarenal liquid was diluted with normal saline solution to 5 c.c. in each instance, and slowly injected into the femoral vein.

serum by the determination of the smallest amount of serum that will neutralize a given quantity of diphtheria toxin.

The question has been raised as to whether this should be called a pharmacologic assay. It seems to me there is no ground for objection to such a classification, as both the toxin and antitoxin are "unorganized substances which produce changes in living organisms and do not act merely as foods"; moreover, the bouillon containing the toxins formed by the germ is comparable to a tincture of nux vomica or other drug, as both are solutions containing the products of vegetable cells in solution. In the one case we have the products of a plant composed of a great many cells working together; in the other instance the products are formed by many

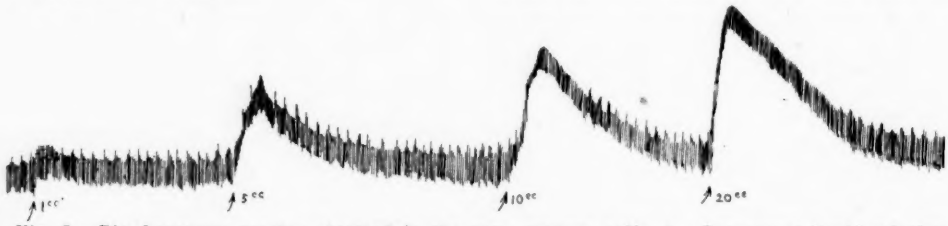


Fig. 2.—Blood-pressure tracing obtained in the same manner as No. 1. Suprarenal liquid solution was, however, more dilute than that employed in No. 1.

isolated vegetable cells. The antitoxin also resembles the suprarenal gland extract in that both are the products of animal cells. The medical profession the world over are agreed that antitoxin can only be assayed by experiments upon animals. In standardizing antitoxin by any of the methods now in use, at least three factors cause a variation in the results, viz., variation in the strength of the toxin, which gradually becomes weaker; variation in the strength of the antitoxin, which also gradually becomes less potent; and variation in the reaction of the guinea-pig to the toxin and antitoxin. On the other hand, in pharmacologic assay of plant drugs, only one variable factor is present, the test animal, since, as a rule, the drugs themselves retain their active properties unimpaired for a sufficiently long time to allow an assay to be made.

Other examples might be cited, but surely a careful consideration of the above results should carry convic-

tion to an unbiased mind that it is possible to determine the pharmacologic strength of drugs from their action on the lower animals.

That, in the absence of pharmacologic assay, great variation exists in the strength of certain drugs, has been demonstrated over and over again by the physician at the bedside. One can appreciate the necessity for such an assay if it is remembered that some of the most powerful poisons known belong to the class of drugs which do not admit of chemical assay. Only a short time ago I found three samples of tincture of strophanthus, purchased in the open market, to be of the relative strength of 1 to 3 to 5. Yesterday one digitalin —Germanic—was found twice as strong as the same preparation from a different manufacturer. Tracing No. 3 indicates what might happen in the case of preparations from the suprarenal glands. Many other instances of variation in strength might be mentioned much more startling than these, some of which have been reported previously; but multiplicity of illustrations is not necessary to prove the necessity of employing, as far as possible, drugs that have been chemically

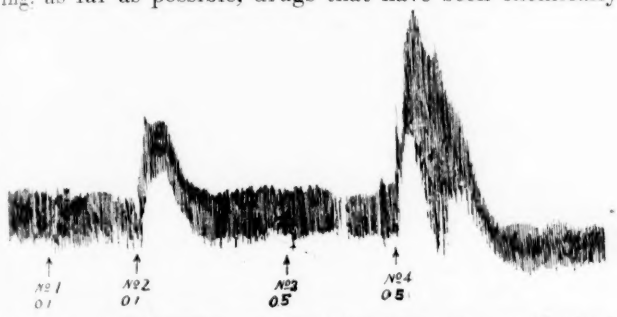


Fig. 3.—Blood-pressure tracing taken from the carotid artery of a dog. No. 1, result obtained from the injection into the femoral vein of a 0.1 c.c. of the extract submitted for assay; No. 2, result obtained from the injection of 0.1 c.c. suprarenal liquid; No. 3, result obtained from the injection of 0.5 c.c. of extract submitted for assay; No. 4, result obtained from the injection of 0.5 c.c. of suprarenal liquid with chloretone.

or pharmacologically assayed in the treatment of disease.

DISCUSSION.

DR. A. B. LYONS, Detroit, Mich., questioned the propriety of discussing a paper when the author was not present to defend it.

DR. LEON L. SOLOMON, Louisville, Ky., said that the paper raises the question on which the Convention for the Revision of the Pharmacopeia, at its last meeting, needed some light. It rejected all formulæ for standardizing by physiologic assay. The chairman of that convention did not think it was possible to standardize drugs by physiologic tests.

DR. LYONS said that he represented the chemical assay of drugs, as his experience had been in this line of work particularly, so that he would not assume to decide on the value of the physiologic assay of drugs. He would, however, state that, generally speaking, there is not a single chemical assay practiced that can give exact valuation of the physiologic or therapeutic effect of the drug in question, except perhaps in the case of opium. He thinks, therefore, that the chemical processes may well be supplemented by physiologic tests. He wishes to be distinctly understood as favoring the supplementing of chemical by pharmacologic tests, and insists that many of the drugs, especially animal extracts, can never be standardized in any other way. He can not understand, therefore, why the convention on revision of the U. S. Pharmacopeia so positively refused to adopt any pharmacologic tests. He said that he would endeavor to have this unreasonable taboo removed in future conventions.

DR. LEON L. SOLOMON, Louisville, Ky., said that it seemed to him that there was some sort of pressure exerted at the pharmaceutical convention against these pharmacologic tests, and that those who were most active by reason of their pressure at former pharmacopeial conventions, by their knowledge of the customs and methods, had succeeded in preventing proper consideration of this subject.

DR. C. T. MCCLINTOCK, Detroit, Mich., said that the physiologic action of a drug is not a question of opinion, but one of fact. In the case of the organic extracts this is the only possible way of proving their activity. Chemical assays may be criticized, but the rise in blood-pressure from the effects of suprarenal extract, for instance, is a matter of demonstration.

THE UNITED STATES PHARMACOPEIA OF 1900.*

PROF. JOSEPH P. REMINGTON, PH.M.,
PHILADELPHIA.

The United States Pharmacopeia occupies a unique position among the pharmacopeias of the world. Its authority is established throughout the country, mainly through the voluntary assent of the physicians and pharmacists of the United States.

It is true that the government is represented in the convention through the Departments of the Army, Navy, and Marine-Hospital Service, and the custom houses recognize the work in their regulations for the admission of drugs into the country; many of our state laws acknowledge the authority of the book by demanding a compliance with its established standards; but the fact remains that the work is not revised or published by the government, but through a representative body of physicians and pharmacists assembled in convention every ten years in the City of Washington.

The thoroughly republican method of reaching the consensus of opinion in both professions, in giving expression of these by the decennial revisions of the book, exhibits one of the best examples of effective submission to authority and is typical of the highest form of citizenship in a modern republic.

European pharmacopeias are government books and have behind them the weight of authority which the laws of the country demand. For many reasons it must be regarded as more than desirable to continue the American method of revision and publication as long as possible, and it is likely that no change will be made so long as wise, conservative and progressive counsels govern the controlling body.

The Pharmacopeia of 1890 was received, not only in this country, but abroad, as a work fully equal to any published in the world, and it is sincerely hoped that the professions of medicine and pharmacy will give to the new committee of revision appointed last month, that loyal support which was so generously extended to the old committees in former years; as is well known, the decennial convention assembled on May 2, 1900, in Washington; delegates were present from every part of the Union. Twenty-eight states were represented by delegates from various medical and pharmaceutical bodies; national organizations were represented through the AMERICAN MEDICAL ASSOCIATION and the American Pharmaceutical Association; while the government sent accredited delegates from the Army, Navy, and Marine-Hospital Service.

Medicine and pharmacy were about equally represented; fifty-seven medical colleges, medical departments of universities and state medical societies sent delegates; while fifty-nine colleges of pharmacy, pharmaceutical departments of universities and state pharmaceutical societies sent delegates.

It will be seen that the convention was a thoroughly representative one; this is further shown by the officers selected to preside over the deliberations, which were

* Presented to the Section on Materia Medica, Pharmacy and Therapeutics, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

as follows: President, Dr. Horatio C. Wood, of Philadelphia; vice-presidents, Profs. A. B. Prescott, of Ann Arbor, Mich.; O. A. Wall and Drs. R. W. Wilcox, of New York, N. S. Davis, Jr., of Chicago, and A. L. Langfeld, of San Francisco; secretary, Dr. H. M. Whelpley, of St. Louis; assistant secretary, Dr. W. G. Motter, of the District of Columbia, and treasurer, Dr. Wm. M. Mew, of Washington.

It will thus be seen that the officers represented the different sections of the country. The committee of revision, consisting of twenty-six members, was selected without geographical considerations, but solely with the purpose of selecting men who were regarded by the convention as fitted by training and technical knowledge to revise the work. Charles Rice, of New York, was unanimously re-elected chairman. Philadelphia is represented by six members, as follows: Drs. H. C. Wood, H. A. Hare, John Marshall, Professors Remington, Sattler and Kraemer; New York by six members, Drs. J. J. Abel, R. W. Wilcox, Profs. Virgil Coblentz, Gregory, E. H. Squibb and the chairman; Boston has but one member, W. R. Scoville; Baltimore, two members, Professor Caspari and Dr. Dohme; Chicago has four, Drs. N. S. Davis, Jr., and W. S. Haines and Professors Oldberg and Hallberg; St. Louis, Prof. James M. Good; Atlanta, Dr. George F. Payne; Madison, Wis., Professor Kremers; Lawrence, Kans., Prof. L. E. Sayre; Ann Arbor, Mich., Prof. A. B. Stevens; and Louisville, Prof. C. Lewis Diehl.

A constitution and by-laws were adopted at the last convention which will place the work on a more stable basis than ever before. Important changes were made in the general principles to be followed in the revision of the next Pharmacopeia, the most prominent of which are as follows:

The Committee of Revision is authorized to admit into the Pharmacopeia any product of nature of known origin; any synthetized product of definite composition which is in common use by the medical profession, the identity, purity or strength of which can be determined. No compound or mixture shall be introduced if the composition or mode of manufacture thereof be kept secret, or if it be controlled by unlimited proprietary or patent rights.

After each pharmacopeial article—drug, chemical or preparation—which is used or likely to be used internally or hypodermically, the committeee is instructed to state the average approximate—but neither a minimum nor a maximum—dose for adults, and, where deemed advisable, also for children, in the metric system, with the approximate equivalent in apothecaries weights and measures. It is to be distinctly understood that neither this convention nor the committee on revision created by it intends to have these doses regarded as obligatory on the physician or as forbidding him to exceed them whenever in his judgment this seems advisable. The committee is directed to make a distinct declaration to this effect in some prominent place in the new Pharmacopeia.

Probably the most important work, so far as the Section on Materia Medica is concerned, is the change of policy above outlined with reference to synthetic remedies. The Pharmacopeia could never be regarded as abreast of the times if such remedies were entirely excluded. It is not the purpose of the writer to argue this much-mooted question, but the action of the committee must be regarded as wise and just.

No Pharmacopeia in the world is justified in opening its pages and giving the weight of its authority to chemicals or preparations whose formulas are secret or so controlled that their identity, purity or strength can not be determined.

It is possible that this rule may seem to work an injustice to a manufacturer who has secured a wide acceptance of his product, but who chooses for commercial reasons to keep his process or the composition secret. But, on the other hand, to open the door to one preparation which did not fall within the rule would necessarily mean the admission of an enormous flood of remedies more or less unstable in popularity and without those elements which would make a remedy useful for ten years.

Although previous conventions voted down the resolution to introduce doses into the work, the convention of 1900 was compelled to recognize the almost universal demand for this innovation; under the limitations indicated in the previous paragraph, it must be admitted that the introduction of doses will be shorn of its dangers.

An interesting discussion took place at the last session of the convention, and a resolution passed, which plainly indicates that the convention desired to have the widest publicity given to the authority of the work and no restrictions should be placed upon the proper use of the text of the book; of course the copyright will be guarded as heretofore, so as to prevent the republication of the book in its original form, but inasmuch as its authority depends largely upon the consent of "the governed," the greater publicity given to Pharmacopeia formulas must tend directly toward a general adoption of its formulas and processes.

In conclusion it may be stated that a very successful meeting was held and there is every reason to believe that the Pharmacopeia of 1900—which will probably see the light in three years from now—will be received with the same welcome which has been loyally accorded to its predecessors.

DISCUSSION.

DR. LEON L. SOLOMON, Louisville, Ky., said that the wisdom of the last revision committee is very prominent in relation to the question of the introduction of doses into the United States Pharmacopeia. He recalled having seen, recently, a number of reports from societies to which the question was submitted: "Shall the Pharmacopeia prescribe doses?" This is a very important question, since there may be law-suits for damages in case some physician wished to overstep the dosage laid down by the Pharmacopeia. Therefore, he is glad to hear that the revision committee resolved to put down the average dose, but not to restrict it by giving a maximum, which properly should be left to the individual physician. The question with regard to patented synthetic articles is also important. The idea seems to be that the door should be open for the limited reception of these drugs. In the resolution passed in this Section, last year, we did not confine ourselves by words, but expressed the opinion that patented synthetics should be admitted to the Pharmacopeia, without stipulating that such articles should be in general use. This wording is surely a wise one and is worthy of the committee, which has also shown its wisdom in other directions.

DR. A. B. LYONS, Detroit, Mich., said that, with regard to the introduction of doses of drugs, he has somewhat different views from those which prevailed in the convention. The view he entertains is that the pharmacopeia is the only authoritative standard we have in relation to drugs, in this country. Questions are continually arising as to maximum doses. While it should be left to the physician to use any dose he chooses, yet some authority should lay down some limit, so that the dangerous doses may be known. Then, if the physician has occasion to exceed that limit, he should be required to show by some mark or sign that he assumes the responsibility of the excessive dose. This is necessary for the protection of the druggist. At present the prescription comes into the pharmacy and there is no authoritative statement as to what is a dangerous dose of the agent.

The druggist knows that physicians are sometimes absent-minded, and is unwilling to put up the prescription without consulting the prescriber, and this involves delay in a case where moments may be precious. Again, if there were a standard and the druggist puts up a dangerous dose, he can be blamed for it, but if there is no standard, he can lay the blame on the physician.

PROF. J. P. REMINGTON, Philadelphia, said that the last speaker is the author of a work on assaying of drugs, and with a chemist's demand for exactness, he desires everything reduced to a certainty. However, we know that doses can never be certain quantities. Suppose, for instance, the Pharmacopeia states that ⅛ gr. of morphin is a safe dose; every physician knows that this dose must be exceeded in many cases and, while it would be desirable for some reasons to admit doses to the U. S. Pharmacopeia, yet it might be a source of great inconvenience in actual practice. For instance, a druggist seeing an unusual dose may delay the compounding of a prescription and cause the death of a patient. He would like to ask how many physicians would engage to *always* indicate an unusual dose, by underscoring or other means, he might do it in many cases, but at some time he would be sure to overlook it and cause trouble and delay. Such a rule would also put it in the power of pharmacists to annoy the physician in a very disagreeable way, by returning a prescription, especially if he has law and authority behind him. He wished to remind the Section that for thirty years the druggists have been trying to get doses into the Pharmacopeia, and that thus far the effort has been successfully resisted by the physicians. The only way in which they can safely be introduced into the Pharmacopeia would be with the understanding that they are not to be regarded as authoritative, and this is practically what the convention ordered the committee to do, for the next Pharmacopeia.

ASTIGMATISM, ITS DETECTION AND CORRECTION.*

H. BERT. ELLIS, M.D.
LOS ANGELES, CAL.

From the standpoint of an oculist, astigmatism is that difference in the curvature of the meridians of the refracting media of an eye which causes rays of light from a point after being refracted to be focused in a line, oval or circle, but never in a point. In examining the refraction of such eyes, it is seldom necessary to study more than the meridians of greatest and least curvature, the so-called principal meridians, which are, as a rule, at right angles to one another. When the error of refraction for these has been corrected, it is corrected for all meridians excepting in cases of irregular astigmatism. Astigmatism may exist in the cornea alone, in the lens alone, or in both, while that of the cornea may be augmented or neutralized by that of the lens. We are, consequently, obliged to take under consideration the radii of curvature of the principal meridians of the whole refractive system in fitting glasses for the correction of this defect.

What method or methods shall be used to detect the full amount of astigmatism in any given eye? This is the question over which the beginner in refraction stumbles most. The methods may be divided into two broad classes: Subjective and objective, and they must be use din conjunction for the best results. Personally, I believe it best to obtain the corneal astigmatism first, and this may be measured accurately and quickly by means of an ophthalmometer, of which there are many varieties on the market, and it would be presumption on my part to say which is best. They are nearly all accurate, and so will fulfil the purpose for which they were invented. How useful is the ophthalmometer? Is it of any use? Is it not, indeed, more harmful than useful? Are not its readings more frequently misleading than time-saving? All these questions have been and are being asked of me by the young practitioner and by those who know nothing of its use except from literature. My answer has been in the great majority of cases, "I find it useful and a great saver of time." While the information gained is sometimes misleading, it is seldom so, and as a time-saver in refracting it is to me a great factor, although I should never prescribe cylinders from the ophthalmometer readings alone.

Of all methods of measuring the total amount of astigmatism certainly the most accurate, after the details of the method have been acquired, and undoubtedly, the most satisfactory to the operator, is skiascopy or retinoscopy. The patient's eyes, however, must be completely under the influence of a cycloplegic. The use of the plain mirror, the source of illumination, close to the operator's eye at a distance from the patient of 1 m., is perhaps the most satisfactory working distance and method. By this method you not only obtain the full amount of astigmatism, but also whatever other refractive error exists.

The ophthalmoscope is used to detect astigmatism, both by the direct and indirect methods, but I am free to confess that personally I should not be able to prescribe from the knowledge gained by this method, and I have always doubted the integrity of those making claims to be able to diagnose accurately low amounts of astigmatism existing in any given eye by this method.

The direct method is used by noting the difference in the strength of the glasses used to bring out distinctly the horizontal and vertical vessels in the region about the macula. The indirect method is hardly worthy of passing notice, because it is not exact and the error must be large in order to be recognized at all.

Of the subjective methods, where we depend on the answers of the patient for our information, it is hard to say which is the best, the quickest, and at the same time the most accurate. In fact, all the subjective methods are more or less slow and, at the same time, more or less inaccurate.

The old stenopeic slit method, which has almost gone out of date, has some points of excellence which make it worthy of more use than it has of late received. The fact that an astigmatic eye is able to distinguish lines which run in the direction of the focal line has been the cause of many methods being invented embodying the principle of the stenopeic slit. Dr. Edward Jackson has for years used a circular card with three parallel 2 mm. black lines with two spaces of the same width, pivoted to a disc with degree marks. Dr. James Thorington has, within the past year, called the attention of the medical profession to his pointed line test, which consists of a series of one-minute black squares, in two sets of three parallel lines at right angles to each other, mounted on a pivot and run by clock work. The perforated disc test and the Hotz test have the same principles involved. Pray's letters are too confusing as a rule to be of great practical value. The astigmatic chart, as typified by the clock face, is also going out of use very largely, except for verification.

The cobalt-blue or chromo-aberration test has some points of advantage as an ametropic test. By it the oculist may be enabled to tell at once the nature of the patient's refraction, but not the exact correction or angle of the astigmatic error.

The subjective test, which is the final court of appeal, is the trial lenses, and these are more or less involved in all the other subjective tests.

* Read by title, in the Section on Ophthalmology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

As to the correction of astigmatism, just so much of the error should be corrected as can be worn with comfort after a few days exercise with the correction. If a compound error, where the myopia or hypermetropia and the astigmatism are of about equal amounts, the astigmatic error is of the greater import, and the ametropic conditions may be best corrected and the symptoms sometimes completely relieved by correcting the astigmatism alone; whereas, the correction of the hypermetropic or myopic error alone would leave the patient in just as great suffering as before the correction. In cases where the hypermetropia or myopia is much greater than the astigmatic error, the correction of the astigmatism alone would be of little value. So, in these cases, a portion of the hypermetropia or myopia must be corrected with the astigmatism. Where large errors of astigmatism exist and there are no symptoms referable to the eyes directly or reflexly, then the oculist is perfectly justifiable in leaving the errors uncorrected.

In presbyopic cases, however, it is the writer's opinion that in nearly every case the correction for astigmatism should be added to the presbyopia.

I suppose that we all have considerable difficulty with our lady patients in regard to their wearing spectacles. At least I find nine out of ten who beg to have nose glasses, or threaten that they will not wear the spectacles, and probably five out of ten will get the nose glasses any way. This factor, I think, is encouraged by the habit of some of the oculists in acquiescing in the whims and notions of their fair patients, and also by the habit that they have of wearing nose glasses themselves, either because of convenience or looks. I must enter my protest, however, against their use in all cases of astigmatism.

"UREINE."

EXPERIMENTS TO DETERMINE THE TRUTH OF THE RECENTLY ANNOUNCED DISCOVERY BY MOOR OF THE TRUE CAUSE OF UREMIA.*

JOHN WEATHERSON, C.E., M.D.
CHICAGO.

When the article by Dr. William Ovid Moor,[1] of Rome, Italy, on "The Discovery of Ureine," appeared and subsequently formed a communication to the Thirteenth International Medical Congress, Paris, 1900, it was pointed out that, if true, it was the most important contribution to urinology, of recent times.

As it offered new fields in the study of the etiology of uremia, dropsy, etc., I began experiments[2] to isolate and to determine its toxic properties.

The method given by Moor for its isolation is substantially as follows: As "ureine" is supposed to be destroyed by a temperature of 80 C., a large quantity of urine is heated at the low temperature of 50 C., until no more evaporation is seen to take place. Silver nitrate is used to precipitate the chlorids; the liquid is then cooled to promote separation of the phosphates, when both chlorids and phosphates are filtered out. The filtrate is again heated at 65 C., until no more evaporation is seen to take place. Alcohol and oxalic acid are used to precipitate the urea which is filtered out. The alcohol is evaporated at 55 C. The sulphates and remaining solids are separated out by cooling and filtering. The color pigments are removed by treating with mercuric nitrate, neutralizing with sodium carbonate and filtering. The remaining alcohol and water are evaporated at 55 C., when nothing is supposed to remain but "ureine," a pale yellow, oily liquid of a heavy specific gravity and resembling, in aspect, olive-oil.

I have repeated this experiment again and again, following exactly the method given by Moor, and using normal urine in amounts varying from 1000 c.c. to 1700 c.c. for each experiment. I never obtained anything—except in one well-defined case which I will mention later—but a yellow alcoholic liquid which could easily be evaporated at the low temperature of 55 C., and leaving scarcely any residue.

Moor states that this mysterious organic liquid is destroyed by high temperatures, and that, to be obtained pure, an excess of reagents is to be avoided.

To know exactly when every milligram of solid substance of the urine is precipitated, without having added an excess of reagents, is no simple matter. In my later attempts to isolate this organic toxin, I employed the following method: After examining a part of a twenty-four-hour specimen of urine for specific gravity, color, amount of urea, etc., I place from 1000 c.c. to 1500 c.c. of the urine in a large porcelain evaporating dish and evaporate over a low yellow flame at a temperature of not over 50 C. A smaller dish may be used and urine added as the water evaporates. In about thirty-six hours, or as soon as no more vapor is seen to arise from the liquid, the remaining fluid is carefully treated with a saturated solution of silver nitrate until all the chlorids have been precipitated.

To exactly determine this point, I use the following test: On a watch-glass resting on white paper, place a few drops of a saturated solution of neutral potassium chromate. On to this, from time to time, add a drop of the urine and silver nitrate mixture, until a faint pink tinge appears. This pink tinge is due to silver chromate and signifies that all the chlorids have been precipitated and that a trace of excess of silver nitrate now exists. This excess is used up by adding 5 to 10 c.c. of the original concentrated urine set aside for this purpose.

The liquid is now cooled sufficiently for the separation of the phosphates and then filtered, and we wash the filter with distilled water until the liquid comes through colorless. We have now removed all of the chlorids and practically all of the phosphates. The filtrate is now put into a beaker and the water evaporated on a water-bath at a temperature of not over 65 C. To determine this point, Moor uses a large mercury thermometer, placed in the liquid and rapidly withdrawn at 65 C., from time to time. He says a puff of vapor will be seen to arise from the bulb as long as any water remains.

To the remaining liquid add one-half its volume of absolute alcohol. Moor now adds 1 gram of pure powdered oxalic acid for each 100 c.c. of urine used in the experiment. He then carefully adds an alcoholic solution of oxalic acid, stirring and allowing the precipitate to settle after each addition, until all the urea has been precipitated as oxalate of urea. I did not add any specific amount of oxalic acid, since this would vary as the percentage of urea of different urines varied, but I carefully added the oxalic acid and made the following test for excess: On a watch-glass resting on black paper, place a few drops of silver nitrate solution. To this, from time to time, add a drop of the liquid until a white precipitate occurs. This white precipitate is not due to chlorids, since they have been removed, but to silver oxalate ($Ag_2C_2O_4$), and signifies that all the urea has been precipitated, and that a trace of excess of oxalic

* Read before the Chicago Medical Society, Feb. 21, 1901.

1. Medical Record, Sept. 1, 1900.

2. These experiments were performed in the laboratory of Dr. Wm. E. Quine, of which I have charge.

acid now exists. This excess is used up by adding a few cubic centimeters of the liquid set aside for this purpose. Filter out the oxalate of urea and wash with absolute alcohol. Evaporate at 55 C. The sulphates and remaining solids may largely be removed by cooling and filtering, using alcohol freely to aid filtration. Next, to remove the coloring matter, treat the filtrate carefully with a saturated solution of mercuric nitrate [$Hg(NO_3)_2$] until no more precipitate occurs.

To determine this point I use the following test: On a watch-glass resting on white paper, place a few drops of a strong solution of potassium iodid. To this, from time to time, add a drop of the liquid until an orange or red precipitate appears, which is due to mercuric iodid. This signifies that all the pigment has been precipitated and that a slight excess of mercuric nitrate now exists, which is used up by adding a few cubic centimeters of the filtrate which has been set aside for this purpose. Now neutralize with sodium carbonate, testing with red and blue litmus paper. Filter again and evaporate at 55 C. Pure "ureine" is now supposed to remain.

This method is exactly the method given by Moor, except the tests for excess of reagents, which I have added. This method could be improved upon by using barium chlorid to precipitate the sulphates, instead of trusting to concentrating, cooling, filtering, etc.

I have repeated this experiment, with the refinements here given, many times, and have never obtained anything but clear yellow water and alcohol, which could easily be evaporated at the low temperature of 55 C.

Not succeeding in proving that the "ureine" of Moor *is* a constituent of urine, I began a series of experiments to prove that it is not. In this I was more successful.

1. Moor, in his publication, assumes that all the water of the urine is evaporated, when he can no longer see vapor arising from the bulb of a large mercury thermometer which is rapidly withdrawn from the liquid when at a temperature of 65 C. It will be remembered that he performed his experiments during the hot summer months. If he had performed them in winter, and as soon as evaporation appeared to cease he had opened his windows to chill the atmosphere of his laboratory, he would have discovered watery vapor arising long after it ceased to be visible in a warmer atmosphere. It is well known that the watery vapor of expired air of man and animals, which can not be seen in summer, is plainly visible on a cold wintry day. Again, he fails to consider the considerable amount of water which would be retained in thick concentrated urine as water of crystallization and which is very hard to drive off at the low temperature of 55 to 65 C.

Water is no doubt present long after Moor assumes it to be absent. But I have been able to evaporate 1600 c.c. of urine on a water-bath, at the low temperature of 55 C., to the consistency of a thick syrupy mush, amounting in volume to not more than two ounces, and driving off nearly all the liquid except what was retained as water of crystallization. The evaporation required several days, but the temperature was never near the point required to decompose "ureine" (80 C.) if any had been present.

To prove that the remaining fluid is water of crystallization and not an oily liquid "ureine," the following experiment is conclusive: Pour the thick syrupy mass mentioned above, from the beaker on the water-bath into a large flat dish. On cooling, the liquid crystallizes into a solid mass, which soon becomes quite hard and dry. Fifty c.c.—nearly two ounces—of liquid "ureine," which is stated to exist in normal twenty-four-hour urine, should be plainly visible if present. The volume of the entire mass which I obtained by evaporation amounted to less than two ounces.

Now, since by supposition, "ureine" is an oily liquid, which remains intact and constant, at temperatures below 75 to 80 C., and since normal urine can—except some water of crystallization—be evaporated to dryness at the low temperature of 55 C., the conclusion is irresistible that there is no such substance as liquid "ureine."

2. It is well known that the total solids of average twenty-four-hour urine amount to from 60 to 70 grams. This includes both organic and inorganic substances. Also, it is known that, of the above amount, urea constitutes about one-half or from 30 to 35 grams. Moor states that the specific gravity of "ureine" is 1270, or it is as heavy as glycerin. That is, "ureine" is nearly as heavy as urea, whose specific gravity is 1323. Yet farther along in his article he states that "ureine" exists in amount equal to twice that of urea. That scientific investigators all over the world should fail to discover an organic substance in the urine amounting to 50 to 60 c.c., which would weigh 65 to 70 grams, or as great as the total known solids, is highly improbable.

3. Moor asserts that he examined the urine of a diabetic woman and found 6 per cent. of "ureine," 2.1 per cent. of urea, and that the specific gravity was 1025 and that the total urine passed in twenty-four hours was 1250 c.c. This statement alone would condemn the article before any scientific body in existence. Let us consider it in detail.

I carefully made up two solutions as follows: Solution No. 1 consisted of distilled water, in which was dissolved 2.1 per cent. of pure urea crystals, which equalled the amount found in this diabetic urine. Solution No. 2 contained 0.9 per cent. of sodium chlorid, the normal amount for 1250 c.c. of urine. By the Mohr-Westphal balance I found: Specific gravity of Solution No. 1 = 1005.5; of solution No. 2 = 1006.5 The formula for the specific gravity of mixtures gives slightly higher values.

To find what the specific gravity of a solution containing water and 6 per cent. of a liquid "ureine," whose specific gravity is 1270, would be, I make use of the following well-known formula:

$$X=(V^1 \times S^1) + (V^2 \times S^2) \div (V^1 + V^2)$$

where V^1 and V^2 represent the volume of the liquids used, and S^1 and S^2 their respective specific gravities. Substituting 94 per cent. water with a specific gravity of 1000, and 6 per cent. "ureine" with a specific gravity of 1270 we have:

$$X = (V^1 \times S^1) + (V^2 \times S^2) \div (94 + 6) = 1016,$$

the specific gravity due to "ureine" alone. This formula, while the one commonly used, is not absolutely correct when tested by experiment, because the actual volume of a mixture does not always equal the sum, in figures, of the separate volumes used. This is due to what is known in physics as "interpenetration" resulting from the porosity of substances, which exists even in liquids. But it is sufficiently correct for our purpose. We now have: Specific gravity due to 2.1 per cent. urea = 1005.5; due to 0.9 per cent. Na Cl = 1006.5; due to 6 per cent. "ureine" = 1016; total for only these *three* substances = 1028.

I have not considered the specific gravity due to sulphates, phosphates, pigments, sugar, etc., which without "ureine" would bring the specific gravity to about 1025, as Moor found it. But if 6 per cent. of a heavy

liquid had been present, the specific gravity would be about 1040 instead of 1025. This experimental and mathematical check on the specific gravities is the most conclusive proof we have that the whole proposition is without foundation.

But while there is no such a single toxic substance as "ureine," it is well known that normal urine is toxic. That it is not due to urea or uric acid has been proved many times. Bouchard states that there are at least seven different toxic agents in normal urine. None of these have been completely isolated. Their sum-total, including pigment, however, amounts to but a few grams.

It has been found by experiment that an aqueous extract of the urine, when injected into rabbits, causes contraction of the pupils and convulsions, but no coma; while an alcoholic extract of the urine causes deep coma, but no convulsions nor contraction of the pupils.

Since we have shown that Moor probably did not drive off all the water of the urine by evaporating at low temperatures, and since he used alcohol freely in all his experiments, and since the rabbits into which he injected his supposed "ureine" died with both coma and convulsions, the irresistible inference is that Moor's "ureine" is a mixture of aqueous and alcoholic extracts of the several toxic ingredients of normal urine. His 50 to 60 c.c. of "ureine" probably consisted of water and alcohol, in which were dissolved a little pigment with the several organic toxins, and some compound of oxalic acid.

It will be remembered that in precipitating the urea, Moor uses an alcoholic solution of oxalic acid, after he uses the powdered form, and which he makes, by dissolving 3 grams of oxalic acid in 10 cubic centimeters of hot alcohol. I made up such a solution, but used it only a few times and then only in small quantities. From Watt's "Dictionary of Chemistry," I learn that if alcohol and oxalic acid be heated together at a high temperature, one part of oxalic acid will combine with nearly the same amount of alcohol to form di-ethyl-ether, or oxalic ether, which is a colorless oil whose specific gravity is 1079. Whether true oxalic ether, or some closely related compound was formed in this case, I do not know, but at any rate when I evaporated the excess of alcohol from the solution I had made up, I found a liquid which left a permanent oil stain on paper, similar to that produced by olive-oil, but not so marked. Oxalic acid dissolved in cold alcohol did not leave these oil spots.

It is interesting to note that at the close of the second attempt at isolation which I performed by Moor's method, I found about 4 c.c. of a liquid which resembled "ureine." But this was the only time, and it was in this experiment that I used the extra quantity of the alcoholic solution of oxalic acid mentioned above. This liquid looked like olive-oil and left a permanent oil stain on paper. It did not have the odor of urine, but it was a pale-yellow color and had the aromatic odor of alcohol. This liquid I believe to be, principally, some oil closely related to oxalic ether. At any rate, a drop of it, with a drop of silver nitrate solution, gave the white precipitate of silver oxalate. It is the presence of some oxalic compound, no doubt, that leads Moor to ascribe de-oxidizing powers to "ureine," oxalic acid being a great reducing agent and readily decolorizing solutions of the permanganates. The presence of this substance, no doubt, helped to mislead Moor. Again, he states that "ureine" belongs to the alcohol group of the aromatic series, and that it splits up at a temperature of about 80 C. There is undoubtedly alcohol there, because he put it there, and his statement that "ureine" splits up at 80 C. is no doubt due to the fact that the boiling point of alcohol is exactly 78.39 C. Again, he states that the characteristic odor of urine is due to "ureine." In my own experiments I found that the odor disappeared when the pigment was removed, due probably to some substance precipitated at the same time. Considerable pigment remaining, however, would give an odor, and also add toxic properties, since the researches of Ritter, Bouchard and Lenoir show that when normal urine is deprived of coloring matter its toxic powers are reduced one-third.

The subject of toxins of the urine is very interesting and highly important, but I can not see that Moor has added anything to our present knowledge of urinology.

DISCUSSION.

DR. JOHN A. WESENER stated that after going over Moor's article very carefully he finds that there is no chemistry whatever in his paper. In fact, it is an article made up simply of words and facts relegated to the background. He was very glad to see that the essayist has shown most emphatically the absurdity of Moor's new compound—ureine. He said that there are a few points to be considered in this article, and when these are thoroughly brought out the so-called "wonderful compound," "ureine," will immediately fade from sight. Moor says that the specific gravity of ureine is 1.27, and the amount of ureine found in the urine under normal conditions is nearly twice that of urea; therefore, assuming that we have a 6 per cent. solution of ureine, the specific gravity of that solution alone would be 1.015. It is known that when the last two figures of the specific gravity are multiplied by 2.33, and then these figures computed to the total amount of urine passed in twenty-four hours, we get approximately the total solids. Furthermore, we find that if a given quantity of urine is evaporated to dryness, and then weighed, the total solids would correspond very well with the above principle. Moor says that ureine decomposes very readily at low temperature, 80 degrees splitting it into new compounds. The speaker suggests that evaporation under those conditions should have been done in a vacuum. Moor's method of removing salts and coloring matter from the urine is a very poor and inaccurate one. Furthermore, Moor says that potassium ferrocyanid and ferric chlorid, when treated with ureine, turn blue. The speaker has always been taught that potassium ferrocyanid and ferric chlorid, when mixed, always gave Prussian blue. Moor probably means to use the red prussiate of iron instead of yellow, but even a mixture of red prussiate of iron and ferric chlorid will turn blue when treated with organic substances. For example, tincture of guaiac will change this solution to a blue color; therefore the speaker would not be surprised that the coloring matter in the urine should, when treated with these two salts, give a blue reaction.

Moor's formula of oxalate of urea can not be recognized by chemists as belonging to any known compound. How he estimated urine is beyond the speaker's comprehension. If he simply weighed the solution, then what he weighed was a most impure product. He not only weighed a certain amount of coloring matter, but also salts, which he failed to remove by his process. The statement is also made that the urine is a liquid composed of water and inorganic solids. It is known that the urine contains between 3.5 and 4 per cent. of solid matter, of which 1.75 per cent. is inorganic and 2.25 per cent. organic. Moor tells us that ureine belongs to the alcohol aromatic group, and when heated it splits into oxy acids, etc.

Probably the most emphatic and absurd statement made by the author is that "the fermentation of urea is caused by ureine, and that bacteria alone could not bring about this change, and without ureine all organic matter would become converted into urea, which would remain in Nature without any use, and thus within a limited period of time all vegetable and animal, as well as human, life would cease." It has been shown most emphatically that pure solutions of urea are changed to ammonium carbonate by a great variety of bacteria. In order to have the fermentation brisk and rapid a certain amount of nourishment in the form of peptones, ammonia salts, glycocol, etc., is necessary. Furthermore, if a decomposed urine is precipitated with alcohol, this precipitate dried and powdered and an aqueous extract made of it, and then added to a solution of pure urea, fermentation takes place quickly, ammonium carbonate being the result.

In this particular instance the enzymes of the bacteria change the urea into ammonium carbonate.

The speaker does not think any members of the profession need have any fear that without ureine urea would remain as an end product of nitrogenous metabolism. The bacteria will very readily convert it into ammonium carbonate in spite of the fact that it is, in the opinion of Moor, a most stable compound. In fact, the air itself would in time change urea to ammonium carbonate. Bacteria not only change ammonia to nitrites and nitrates, but we have a reversible action where the nitrates are changed back to ammonia. These salts are much more stable than urea, being inorganic instead of organic.

DR. WILLIAM A. EVANS said that the essayist had answered the statements of Dr. Moor so thoroughly that neither the original paper nor the refutation thereof would require any attention. From the statement, in Dr. Weatherson's paper, that urea was non-toxic, he gave some observations drawn from a paper written by Dr. Herter for the Welch "Festschrift." Since 1865, when Frerichs popularized the belief that uremia was not due to urea, there has been a growing disposition to regard this substance as almost, if not entirely, harmless. The work of Dr. Herter demonstrates that while urea is not a very actively toxic agent, and while it is readily eliminated by any one of several routes, at the same time it has some toxic action, and is responsible for some part of the symptoms known under the symptom-complex of uremia. He determined that the dog's kidneys secrete twenty times the normal quantity of urea; that ten grams of dog's kidney can secrete 1.57 grams of urea in one hour; that the kidney of the Batrachian was less efficient, and that the mammalian kidney rose in efficiency as it advanced in the scale of life. . .

It has been determined by other authorities as well as by Herter that when a large amount of urea is thrown into the circulation the amount recovered from the urine is considerably less than the amount injected. This difference represents the urea which was stored in the liver, the brain, the muscle and other structures, as well as the urea which is eliminated by the gastrointestinal tract, and the sweat glands. In 1898 Drs. Hoelscher and Wesener showed that in some cases of chronic nephritis and acute articular rheumatism the proportion of urea in the sweat amounted to .3 of 1 per cent. Herter and Wakeman have shown that whereas there is habitually some little elimination of urea by the gastro-intestinal tract when the percentage of urea in the blood amounts to .2 of 1 per cent., there is a great increase in gastro-intestinal elimination, accompanied by congestion of the mucosa and submucosa, dropsical accumulation in the epithelium, together with considerable desquamation thereof; that if the proportion of urea amounts to considerably above .2 of 1 per cent., the gastro-intestinal epithelium fails to eliminate urea further. In the experiments of Herter if an urea solution stronger than 4 per cent. was injected, there followed hematuria, albuminuria, decrease in the quantity of urine, and finally total suppression; that the decrease in the waters of the urine preceded the decrease in urea. It was demonstrated that in the case of dogs and monkeys convulsions, bearing a close resemblance to uremic convulsions, came on when the blood contained .3 of 1 per cent. urea, and death invariably followed when the blood contents of urea had amounted to .6 of 1 per cent. The urea in normal human blood amounts to .05 of 1 per cent. In pathologic conditions accompanied by a normal kidney epithelium, there is but little danger of accumulation of urea in the blood or in the tissues, regardless of the amount that is manufactured or absorbed. If, however, there is destruction of kidney epithelium as the result of causes acting at present, or as the result of causes previously acting, for example chronic nephritis, there is liable to be an increase in the blood-current of urea. Bradford offers a study of three cases of anuria, in which the blood percentages were .277, .324 and .44, respectively. Herter, in a study of fourteen cases of lobar pneumonia, found increases of urea ranging from an increase of 64 per cent. in one case to an increase amounting to 1200 per cent. in another. In every case of chronic nephritis examined the urea in the blood was found to be increased. He divided hs cases into three groups: The first, in which the percentage of urea in the blood was .1 of 1 per cent. or less: the second, in which it varied between .1 of 1 per cent. and .3 of 1 per cent.; the third, in which it was .3 of 1 per cent or over. The symptoms of these cases were those ordinarily recognized as the symptoms of uremia. The mode of death of the dog that died after taking unusually large injections of urea was the same as that in the condition known as uremia. It is difficult to determine whether the symptoms of uremia are due to urea or to other urinary ingredients, but it is to be remembered that in the case of the dog no urinary ingredient was injected except urea. Dr. Herter makes the statement that creatin, uric acid and other members of the xanthin group could not be the pathogenic agents in these cases. He called attention to a point that clinically has been observed most frequently by all of us, namely, that there is great difficulty in determining whether the symptoms of uremia were due to urea by quantitative examination of the urea in the urine. It would be necessary to examine the urine quantitatively for urea day by day for a considerable time, and to know with certainty how much urea was absorbed from the food, and how much was excreted by the gastro-intestinal tract and by the perspiration. As these considerations are altogether impossible, the quantitative determination of the urea in the urine gives us an altogether incomplete idea as to the amount of urea in the blood, and it is the urea in the blood and in the tissues that is responsible for any effects that urea might have.

DR. WEATHERSON, in closing the discussion, stated that Professor Haines, of Rush Medical College, had been working on the same subject and had conducted a series of experiments which corroborated his own conclusions.

ANASTOMOSIS OF THE URETERS WITH THE INTESTINE.

A HISTORICAL AND EXPERIMENTAL RESEARCH.*

REUBEN PETERSON, M.D.

Professor of Gynecology Post-Graduate Medical School; Assistant Clinical Professor of Gynecology, Rush Medical College; President of the Chicago Gynecological Society.

CHICAGO.

(Continued from p. 635.)

AUTHOR'S EXPERIMENTAL WORK.

The following experiments, begun nearly eighteen months ago, have been performed at the Post-Graduate Hospital and Experimental Laboratory and in the Physiological Laboratory of the Chicago University. The bacteriologic and microscopic work has been conducted entirely by my friend, Dr. F. Robert Zeit, professor of pathology at the Post-Graduate Medical School, and I gratefully acknowledge my indebtedness to him for the thorough manner in which he has performed a most ardous task.

Dogs were used for all the experiments, and chloroform was always employed for anesthesia. As the work was to include the intestinal tract, various methods of emptying the animal's bowels preparatory to the operation were tried. The administration of cathartics the day previous to the operation was a dismal failure, as a diarrhea always ensued, and even after the exercise of the greatest care liquid feces escaped through the incised gut wall. As the operation was to be upon the lower bowel, attempts were made to empty it by large rectal injections, but this method failed until it was accidentally discovered that it could be most satisfactorily accomplished on the *anesthetized* animal. The rectum and descending colon can be so thoroughly cleansed by this method as to enable one to entirely dispense with bowel clamps. This has been dwelt on at some length because fecal contamination was responsible for many deaths in the first series of cases.

The most rigid asepsis was employed in every operation. Silk ligatures and sutures were used. The abdominal wound was closed by interrupted through-and-through sutures. In the large majority of cases it was found impossible to keep the abdominal wound aseptic, and suppuration ensued, but in only a few cases was this followed by any serious results.

For the first twenty-four hours the animal was given nothing but water, and the diet was limited to milk for the next two days. After the first few days the surviv-

* Read before the American Gynecological Society, Washington, D. C., May 1, 1900.

ing dogs were given ordinary food. After the first week the animals were allowed to run with their fellows, and no especial care was given them except to note carefully any change in their condition.

In giving a detailed account of the experiments no attempt will be made to gloss over faults in technique, which, in the light of subsequent operations, were apparently inexcusable. When one form of operation failed another was tried, only to find later on that the change had been made in the wrong direction. The loss of so many animals necessitated a vast amount of work, since the main object of the experiments was to determine the ultimate effect upon the animal of uniting the urinary and digestive tracts.

Three series of experiments were conducted:

1. Bilateral uretero-intestinal anastomosis.
2. Lateral uretero-intestinal anastomosis.
3. Uretero-trigono-intestinal anastomosis.

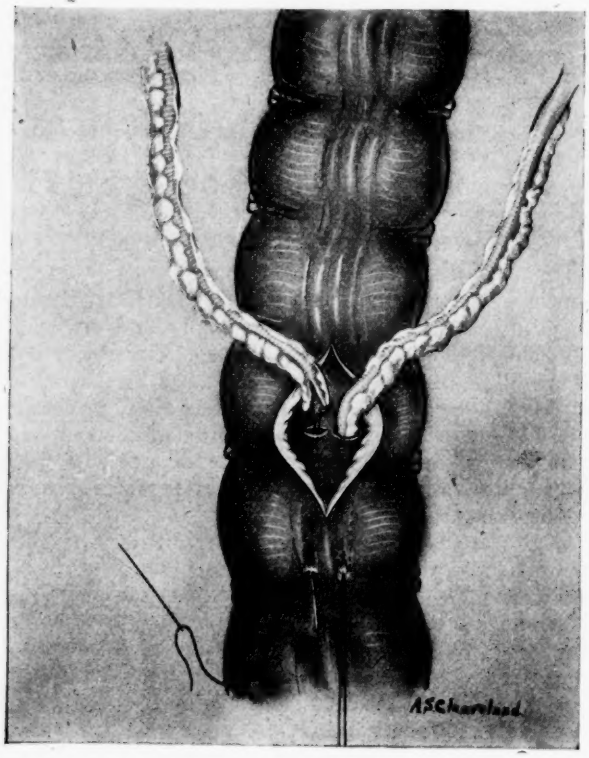


Fig. 12.—*Uretero-intestinal Anastomosis.* Serosa and muscularis incised. Ureter split and drawn through small incisions in mucosa by sutures passed through intestinal wall 1½ inches below lowest point of incision.

1. BILATERAL URETERO-INTESTINAL ANASTOMOSIS.

Both ureters were implanted simultaneously in the rectum in twenty-eight dogs, with five recoveries and twenty-three deaths. In five dogs an operation similar to that described by Fowler was employed. The serous and muscular bowel coats were incised for a number of inches and a mucous flap formed upon which the ureters were implanted and sunk in the bowel. All these dogs died in from two to five days, of peritonitis and escape of urine into the peritoneal cavity from a sloughing of bowel-flap and giving away of the stitches.

In twenty-three dogs the following plan of operation was adopted with various modifications of technique: An incision was made into the bowel-wall through the serous and muscular coats. The ureters were implanted in the rectum through small incisions made in the mucosa and either their outer coats or peritoneal coverings. The serous and muscular flap was then drawn over the ureters and secured by interrupted Lembert sutures. In some cases the ureters were passed through one and in other cases two incisions in the mucosa. Of these twenty-three cases, five recovered and eighteen died.

Causes of Death. In most of the cases death ensued from general peritonitis, usually accompanied by escape of urine into the peritoneal cavity. This escape of urine in most instances arose from a slough at the site of anastomosis. In a few cases there was a well-marked slough of one or both ureters. In three cases one or both ureters pulled out of the incision and opened into the peritoneal cavity. In three instances uremic coma, caused by acute nephritis, was responsible for death.

The ureters were, as a rule, dilated in the dogs dying shortly after the operation, although the uretero-rectal orifices were patent to a stream of water injected into the pelves of the kidneys. In the majority of instances the pelves of the kidneys were dilated and filled either

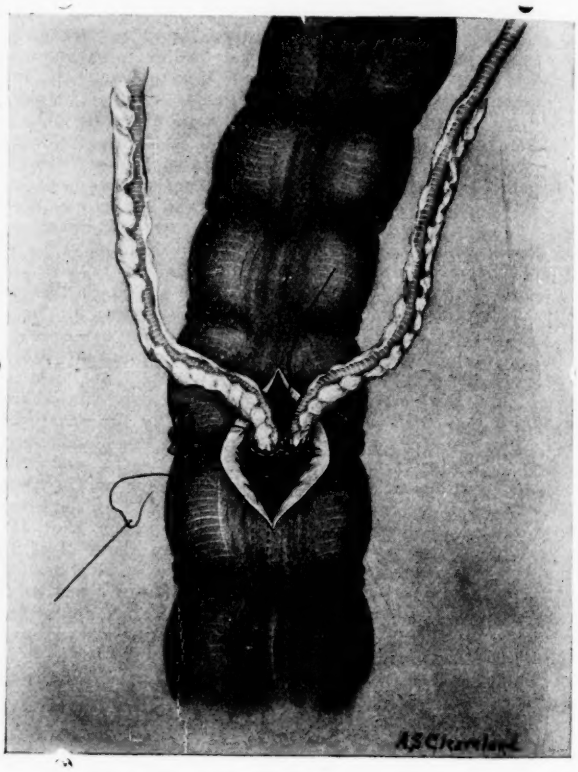


Fig. 13.—Both ureters held in place by tying of lower sutures, showing method of closing mucosa about ureter by passing sutures through mucosa and peritoneal covering of ureter.

with urine or purulent fluid. The split kidneys showed evidences of acute nephritis, being enlarged, soft, and intensely congested.

In a few instances bacteriologic and microscopic examinations were made, although this was considered unnecessary in the other fatal cases, since the causes of death were only too apparent.

All the dogs in this series were operated upon without a proper cleansing of the rectum, and fecal extravasation through the incision made in the mucosa was extremely common. This led, in quite a number of cases, to infection of the flap and sloughing of the sutures.

At first the incisions in the bowel were made unnecessarily long and too much raw surface was exposed to the dangers of infection. The statistics improved immediately the incision was shortened.

In the first eight cases the ureter was located near the bladder and then dissected upward for a number of

inches by the finger. This was a mistake, since it interfered with the ureteral blood-supply and did not leave any peritoneum on the ureteral coat.

Any failure to close securely the mucosal openings through which the ureters passed led to fecal extravasation; if they were closed too tightly stricture of the ureter and hydronephrosis ensued. It was soon found that the dog's ureter was extremely delicate and would not stand sutures passed through any of its coats without great danger of resulting stricture. This was obviated by passing the sutures through its fatty and peritoneal envelopes.

The chances of pulling out the ureter were found to be lessened by securely fastening the two ends of the ligature, by means of which the ureter was drawn through the incision in the mucosa. The greatest care was found necessary in order not to constrict the ureters by the serous sutures. A number of deaths from hydroureter

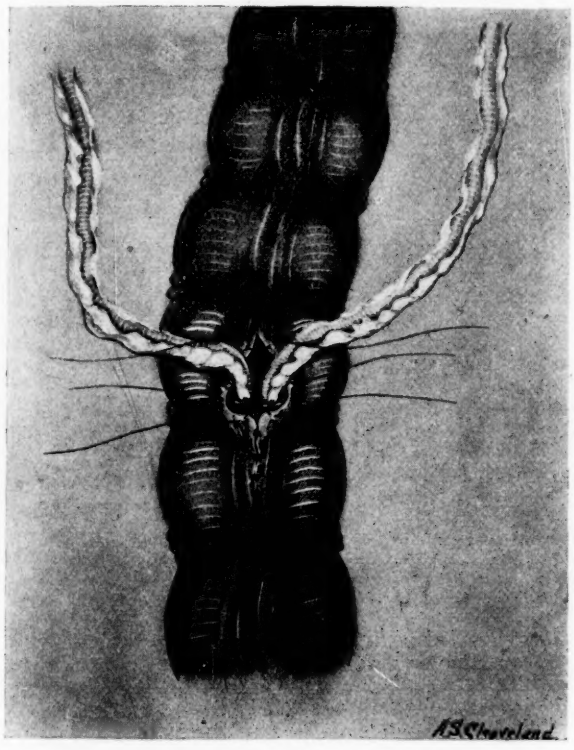


Fig. 14.—Ureters secured in position, serosa and muscularis being closed about ureters by a row of interrupted Lembert sutures.

and hydronephrosis were explainable from the failure to observe these precautions.

Naturally the greatest interest centers in the five dogs that recovered from the operation, and, therefore, these experiments are given in detail.

Experiment 22. Dog I. Large black spaniel. Operation February 26, 1899. An abdominal incision was made, three inches in length, as low down as possible, and two inches to the left of the penis. The ureters were lifted up from the bottom of the pelvis and loosened for three inches by the scissors, care being taken to preserve a portion of the peritoneal covering. Each ureter was severed about one and one-half inches from the bladder and wrapped in sponges. A one-half inch incision was now made through the serous and muscular coats of the rectum and the two flaps separated outward by blunt dissection. A suture armed at each end with a needle was passed through the end of each ureter after the latter had been slit upward one-third of an inch. Two small one-fourth-inch incisions were now made at the lower and outer surfaces of the exposed mucosa. Through these openings the needles were passed and brought out of the bowel one inch below the point of entrance. The ligatures were now tightened and the ureters drawn downward through the incisions in the mucosa. The mucosal apertures were closed about the ureter by fine silk ligatures passed through the mucosa and outer coats of the ureter. The serosa was now closed by interrupted Lembert sutures. (See Figs. 12 to 14.)

The dog made an excellent recovery, had good control over his urine, which he voided, mixed with feces, about every four hours. One month after the operation he did not seem so well, and there was a whitish discharge from the penis, with straining and considerable pain. These symptoms increased in severity, and the dog was killed forty days after the operation.

Pathologist's Report. Post-mortem April 26, 1899, forty days after operation. Liver, spleen, heart and lungs normal. In the rectum was a papilla, on the sides of which were two ureteral openings, both of which were patent. Capsules of both kidneys slightly adherent. Left kidney showed a few yellowish purulent foci on cortex, with yellowish rays from pelvis to cortex. Right kidney was slightly granular. The bladder, small and contracted, contained whitish purulent fluid.

Bacteriology. Substance and pelves of kidneys free from bacteria. Bladder contained short bacilli, similar to diphtheria or streptococci, no bacteria in heart, liver or spleen.

Histology. Proliferation of interstitial connective tissue forming dense rays from papillæ to cortex with retraction on surface of cortex. Many dilated desquamated tubules. Increased connective tissue around glomeruli. Some cloudy swelling in remaining epithelium of tubules.

Experiment 25. Dog II. Large hound. Operation March 11, 1899. Technique same as in Experiment 22. This dog

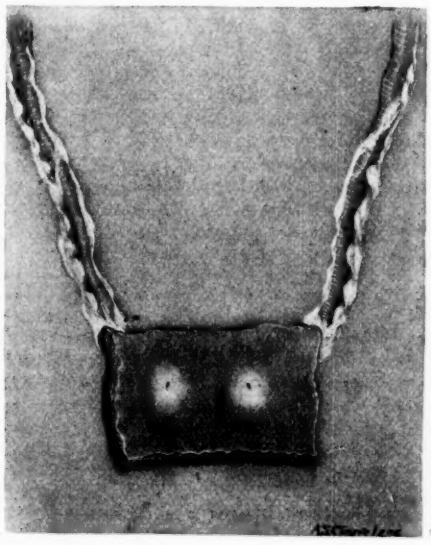


Fig. 15.—Author's modification of Maydl's operation (ureterotrigono-intestinal anastomosis). Rectangular vesical flap containing ureteral orifices. Ureters have been dissected free from their peritoneal coverings in order to be more plainly seen.

hardly had a sick day after the operation. April 20, was killed while fighting with a bulldog.

Pathologist's Report. Autopsy April 20, 1899, forty days after the anastomosis of both ureters with the colon, twelve inches from the anus. Pyemia; secondary infection; endocarditis. Ureters were patent and emptied into two small papillæ in rectum size of small peas and one-eighth of an inch apart. The intestine was studded with smaller papillæ. Left kidney: purulent foci in cortex. Pelvis contained purulent fluid. Pyelonephrosis ascendens; hydro-ureter. Right kidney apparently normal, no dilatation of ureter, but pyelitis present and a few purulent foci in cortex; capsule strips easily. Bladder was contracted and contained purulent fluid. Spleen soft, liver contains a few purulent foci. Heart and lungs normal except fibrinous thrombi in both ventricles extending into large vessels.

Bacteriology. Left kidney cortex, coli bacilli. Right kidney cortex, coli. Bladder: large coli and a few small diphtheroid bacilli and streptococci. Liver: many coli. Spleen: no bacteria.

Histopathology. Left kidney: hyperplasia of interstitial connective tissue. Walls of small blood-vessels thickened. Fatty and cloudy epithelial cells lining tubules here and there filled with granular detritus. Right kidney: interstitial infiltration from pelvis to cortex in narrow rays surrounded by tubules showing cloudy swelling and fatty degeneration of lining epithelium of convoluted tubules in places necrotic.

Experiment 18. Dog III. Small brown dog; operation February 11, 1899. Same technique as in previous experiment, except the silk stitches used to close mucosal opening took in outer coat of ureter instead of merely peritoneal and fatty coverings. Was never in as good health as dogs I and II. Gradual loss of flesh. Died May 6, 1899. Post-mortem same day.

Pathologist's Report. Died from pyemia and secondary infection eighty-four days after operation. Implantation of both ureters in rectum. Pyelonephrosis and pyoureter on right side; ureter not patent. Pyelonephritis left side; ureter patent. Spleen and liver soft, bladder contracted and filled with purulent fluid; heart contains organized thrombi.

Bacteriology. Both kidneys contain coli; bladder contains staphylococci and diplococci; unfortunately the blocks were lost, and no microscopic examinations were made of the kidneys.

Experiment 27. Dog IV. Large dog; operation April 17, 1899. Same technique as in other experiments; died May 26; attendant failed to notify pathologist until the dog was in bad condition.

Pathologist's Report. Death from pyemia and endocarditis after thirty-nine days. Implantation of both ureters in rectum; operative results good. Right kidney: pyelonephritis and pyeloureter. Left ureter normal. Both ureters patent. Bladder contracted, containing purulent fluid; endocarditis; spleen large and soft; purulent foci on surface of liver. No bacteriologic or microscopic examinations made.

Experiment 19. Dog V. Medium-sized gray bitch; operation February 15, 1899. Same technique as in other operations, except both ureters passed through one incision in mucosa and secured by sutures through mucosa and peritoneal coverings. Dog made a good recovery. Lost some flesh for first month, then remained in perfect health until killed, twelve months later.

Pathologist's Report. (Dox X, pathologic report.) Both ureters in rectum; killed after thirteen months and ten days; recovery from pyelonephritis with contracted kidney. Cultures taken while alive, under chloroform; liver and spleen normal; bladder, contracted to size of hickory nut; kidneys, capsules opaque and congested, slightly adherent, surface nodular and contracted; pelvis, opaque and thickened; radiating yellow lines from pelvis to surface of kidney. Pelvis of left kidney contains a mass of grayish concretions. Ureters: bilateral dilatation; patent. Smears and cultures from both kidneys. Spleen, liver and left ventricle were negative.

Histopathology. There is present an interstitial pyelonephritis; abscesses emptied by absorption of pus and evacuation into the pelvis of the kidney. The newly formed connective tissue has matured and contracted. Microscopically the elevated portions consist of fairly normal parenchyma. The retractions consist of new formed and matured connective tissue with atrophic glomeruli and thickened capsules in its neighborhood. The blood vessels have thickened walls. The tubules are dilated and desquamated.

The operative results in the five dogs recovering from the operation may be termed fairly good. In only one case was the ureter thought not to be patent. In all the other instances the uterers were patent and opened at the sides of small papillæ in the rectum, the openings looking not unlike the normal vesico-ureteral orifices. (See Fig. 20.) In four of the cases, however, the ureters were dilated, showing that the uretero-rectal openings had contracted. In one case pyo-ureter, and in another hydro-ureter, was noted.

Each of the five cases showed the gross lesions of an ascending renal infection confirmed in nearly every case by bacteriologic and microscopic examinations. The extent and virulence of the infection varied. In three cases it was so severe as to lead to secondary infection, endocarditis and pyemia. In one case the dog when killed was recovering from a pyelonephritis, and in the most interesting animal of the lot a complete recovery took place after the pyelonephritis, with resulting contracted kidneys. In both these cases the cortex and pelves of the kidneys were free from bacteria, showing that the animals had become immune to the colon bacilli. In the other cases, however, the micro-organisms were abundant and showed the presence of an active infective process.

2. LATERAL URETERO-INTESTINAL ANASTOMOSIS.

Sixteen dogs operated upon, with three recoveries. Twelve died of general peritonitis due to leakage through the stitch-holes; one died of hemorrhage.

The object of these operations was to unite the ureters to the bowel by a lateral anastomosis, so that dilatation of the ureters and ascending infection could be avoided. The task presented many technical difficulties because of the small size of the ureters even in the largest dogs, and the tendency to leakage when the through-and-through stitch was employed. The ureters were cut away close to the bladder and dissected upward for two and a half inches, together with a fold of peritoneum. A slit one-half inch in length was then made in the ureteral wall one-half inch above cut end, and the same length incision made in the serous and muscular intestinal layers. The anastomosis was made by a continuous right-angled stitch passing through the ureteral wall and the peritoneal and muscular layers of the intestine. Before the suture was drawn tight the bowel mucosa was cut the entire length of the incision. In the first two dogs recovering the mucosa was simply incised. In the last animal a portion of the mucosa was removed. The operation was completed by tying the severed ureters.

Experiment 32. Dog VI. (Dog V Pathological Reports.) Great Dane pup. Operation September 20, 1899. Lateral anastomosis of left ureter with rectum, according to method described above; mucosa simply incised.

Pathologist's Report. Dog lived sixty days. Right kidney capsule adherent, ureter dilated; nodule size of pea where ureter entered rectum. Heart: fibrinous organized clot in right auricle and ventricle. Liver covered with numerous yellowish areas.

Bacteriology. Right kidney, coli; Liver, coli.

Histopathology. Same as in dog I. Death from pyelonephritis with pyemia.

Experiment 33. Dog VII. (Dog VIII. Pathological Reports.) Yellow bitch. Operation September 22, 1899. Technique same as in Dog VI. Lost flesh, and died December 18, 1899. Autopsy, same day.

Pathologist's Report. Died eighty-seven days after operation. Right kidney, capsule adherent; pyelonephritis. Right ureter contains pus. Liver hyperemic. Heart, yellow fibrinous thrombi in left auricle and ventricle. Septic endocarditis. Death due to pyemia and endocarditis.

Bacteriology. Left heart, liver, and right kidney show coli.

Histopathology. Right kidney atrophic and granular, much interstitial hyperplasia, with contraction. Some small-cell infiltration, dilated desquamated tubules and atrophic glomeruli, with thickened capsules.

Experiment 50. Dog VIII. (Dog IX. Pathological Reports.) Operation November 18, 1899. Same technique as in other two dogs, except line of sutures protected by peritoneal flaps.

Pathologist's Report. Death due to toxemia and pyelonephritis. Ureter patent and not dilated. Left kidney very much enlarged. Pelvis dilated and filled with pus.

Bacteriologic and microscopic examinations showed findings already described in cases of pyelonephritis.

This last case has been included among recoveries, since death was due to infection and not to failure of technique. The first two cases died in sixty and eighty-seven days respectively of pyleonephritis, pyemia, and septic endocarditis. They can hardly be considered fair tests of the operation of lateral anastomosis, since the slit in the mucosa partially closed, and may have produced the dilatation of the ureter. The last case, however, was perfect from an operative standpoint, there being absolutely no obstruction to the flow of urine or dilatation of the ureter. Yet death resulted in ten days from pyelonephritis and pyemia.

(To be continued.)

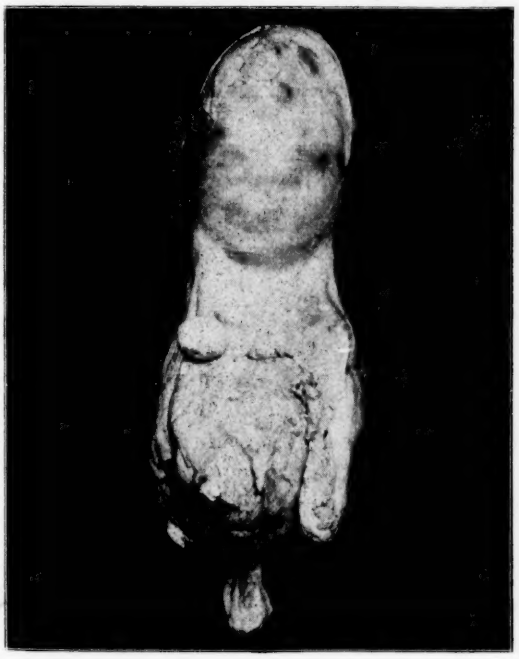
Clinical Report.

ABDOMINAL HYSTERECTOMY FOR MULTIPLE FIBROMA WITH A FIVE-MONTH GRAVID UTERUS.

GEORGE R. GREEN, M.D.
MUNCIE, IND.

On July 13, 1900, I was asked to see a married woman 28 years of age. She was confined to bed with a temperature of 101 F., irregularly enlarged abdomen, nodular in form, but

with some elasticity, circumscribed peritonitis on the left side with pain and great tenderness, so much tenderness in fact as to make abdominal palpation almost valueless. Ten years



ago the patient complained of a lump in her side; it remained stationary, however, or increased very little in size. Eighteen months before my visit she had married, and thirteen months later gave evidence of pregnancy, i. e., suppression of menses, morning sickness, etc. At this time this tumor—so long known to exist—began to grow rapidly and became very painful, so much so that she was finally forced to keep her bed and accept the daily use of anodynes to secure rest.

At the time of my visit she looked ill, her weight was not over 90 pounds; she was pale and weak, with rapid pulse, loss of appetite, abdominal distension and constant pain. I advised an exploration, so that, if possible, the growth might be removed, or at least its exact nature determined, explaining to the patient that the fact of a possible pregnancy would not necessarily prevent us from removing a fibroma if found advisable, her general condition being such that she would otherwise hardly live to the end of gestation.

On the morning of July 17, with the usual precautions, I opened the abdomen by a median incision and, separating some extensive adhesions on the left side and enlarging the abdominal opening, I succeeded in bringing a fibroid as large as my two fists into the opening; this was followed by another as large, and lastly, a gravid uterus studded with many other like growths of various sizes and scattered over the entire uterine wall, some subserous, others deeper. For the first time I held a living gravid uterus in my hands, and I was very forcibly impressed by the very great thinness of its walls, and if the normal uterus at term is as thin as that, I only wonder why more of them do not rupture during the violent contractions necessary in labor.

Hastily consulting with my assistants, we thought the only feasible thing to do was to remove the entire mass, uterus included. Ligating the uterine arteries, I cobble-stitched through the cervix to prevent the possibility of vaginal infection, and cut away the entire mass, cutting through the cervix close to the stitches; but little blood was lost, though the shock was profound, and after irrigating the abdominal cavity with hot salt solution, I allowed as much normal salt solution as I could to remain, and closed without drainage. Twenty-four hours later the pulse-rate was 140 and I gave, by hypodermoclysis, one quart of normal salt solution into the tissues underneath the mammary gland and requested the nurse and attending physician to repeat in eight hours and again in sixteen.

From this time the patient gradually improved and on removing the dressings on the tenth day the abdominal wound was healed. She was out of bed in four weeks and is now well. So far none of the nervous manifestations of the artificial menopause has developed.

The specimen was presented to the pathological section of the Indiana State Medical Society.

112 W. Jackson St.

Psychoses Following Operations.—At the meeting of the Edinburgh Obstetrical Society, February 13, Dr. J. Haliday Croom (*The Lancet*, March 2) read a paper on psychoses following peri-abdominal operations, and reported cases, incidentally making some remarks on operations undertaken on insane women for a cure of the mental disease. Dr. Croom considers that under no circumstances ought any insane woman to be operated on unless there is some distinct condition that is compromising life. Removal of ovaries and other operations with a view to influencing better conditions of insanity and hysteria were very unpromising. After degenerative processes have taken place in the brain, he considers it absolutely useless to look for any mental cure by any form of operative procedure. As regards the insanity from operation, his own records show five cases in a thousand abdominal sections. In looking for the causes of these mental disturbances after operation, the first factor was the hereditary one, and the second possibility was sepsis; loss of blood, defective action of the kidney, etc., also had their influence in producing mental symptoms. In removing the ovaries the climacteric was induced and the woman placed in all the possible risks of that period. Probably a neurotic constitution was an essential prerequisite for the development of post-operative insanity. For illustration of the possibilities even without operation, he reported a case of mental disturbance for menstruation, in a woman with good family history, where no operation had been performed. He calls attention to the fact that the normal functions of the uterus and ovaries are themselves not unassociated with mental aberration; alterations in the temper, actual hallucinations, disordered appetites of all kinds were occasional accompaniments of these perfectly normal processes.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

61 Market Street : : Chicago, Ill.

Cable Address: "Medic, Chicago"

Subscription price: Five dollars per annum in advance

SATURDAY, MARCH 16, 1901.

REORGANIZATION OF THE BRITISH MEDICAL ASSOCIATION.

The need of a better organization of physicians is felt in the United States, where the disadvantages of an ununited profession in the struggle against united quackery, and other evils, are every day manifest. In other countries similar evils are to be fought and like needs for organization exist; therefore, we hear of movements in the direction of furthering professional interests, such as business association, etc., in almost every quarter of the globe. Organizations and combinations are the special feature of the present day, and medicine can not be an exception to the rule. Organization to meet the new conditions as they arise is the essential to success, and this fact is apparently being more generally recognized now than at any time in the past.

The British Medical Association has been taking steps, through a strong committee, toward its reorganization, and the recommendations of the committee—its first or provisional report—are given in a supplement of forty-eight closely printed pages of the *British Medical Journal* of February 16.

At the present time the British Medical Association has, as an essential element, a system of local organizations called Branches, in which only about two-thirds of the members of the Association are included. It transacts its affairs in General Meetings and through the Council, the latter being partly representative and partly created in such a manner as to make it more or less perpetual. The powers of this body are ill-defined, although it practically controls all the affairs of the Association, the wishes of the General Meeting, as expressed by resolutions, not being necessarily respected. Nevertheless, the will of the General Meeting, if an attempt were made, would legally override that of the Council. Regarding this, the committee says: "The powers thus possessed by the General Meetings, though their exact extent has been for some years in dispute, are unquestionably great, and in view of the essential unfitness of such meetings for such duties, are a source of danger to the Association. In any association of 18,000 persons, it is impossible that all should attend a General Meeting; in the British Medical Association it is impossible that more than a very small proportion should attend such a meeting; those who attend do so on their own account without any authority or power to represent others; and thus the decisions of a very small assembly whose composition is quite fortuitous stand legally as the decisions of the whole Association. This applies to every question of policy whether concerning the internal affairs of the Association or the general interests of the profession." The committee therefore suggests that this condition should be changed. The Association, it says, has outgrown its present limitations and its plan of organization, which has not been changed since 1874.

The recommended organization includes primary units or Divisions, corresponding as nearly as possible to parliamentary districts or constituencies. A certain number of these are grouped to form a more comprehensive body called a Branch, numbering not less than 200 members. All memberships in the Association must be through these Divisions. It will be one of the duties of the Division delegate to keep a list of all the medical men in his Division territory and act as a recruiting officer for the Association. The Branch is to supervise the Division, and still above it is the General Council, made up of the delegates from the respective Branches and the general officers of the Association, subject in some respects only to the general annual business meeting. If, in its judgment, any resolution adopted by the annual general business or delegate meetings does not properly represent the wishes of the Association, it can, within certain limits as to time, refer it with its own views thereon to the consideration of the special meetings of all the Divisions, and in that case the said resolution would not be valid or binding unless it received the approval of the majority of the members present and voting in the said special meetings of the Divisions. This is the referendum feature of the plan, which, as we understand it, is a final check on the Council in all business and other matters of importance. Provisions are made for details of voting, office holding, subscriptions, etc., but the above are the leading features of the proposed reorganization that are of interest to us. On the whole, the plan seems to be a good one.

Possibly the scheme thus tentatively set forth will be more or less modified, but the fact that it has been prepared as an attempt to meet needs that exist is of interest. It is evidence that a better organization in the medical profession is a recognized necessity in Great Britain, and it may be valuable in a suggestive way to the profession in this country. It is evident that there are some difficulties ahead if the plan is to apply to England's dependencies, and some of them do not appear to us to have been fully considered. The medical profession in the Dominion of Canada, for example, would be much more advantageously affiliated with a well-organized profession in the United States than with one in a distant island with which they are only politically connected; and equally serious disadvantages appear to us possible in the government of an Antipodean profession by a predominantly insular organ-

ization. The world has not yet grown so small that distance is altogether annihilated, and sentimental British imperialism may prove less influential than local interest and feelings. A thorough local organization, however, with a general central control of such extent as will co-ordinate and economize effort, seems to be one of the best methods of meeting the needs of the profession as they arise, and such a plan as above indicated ought to fulfil this indication, perhaps better than any other.

The British Medical Association is to be congratulated on having a committee which took hold of the matter so thoroughly, and which has taken the time to present such an exhaustive and complete report. The result will be watched with interest by many on this side of the Atlantic.

PARASITIC HEMOPTYSIS.*

The discovery of the lung fluke in hogs in this country has led the zoologists of the Bureau of Animal Industry in Washington to collect the principal facts in regard to this parasite and to bring the chief features of the human form of this infection to the attention of practitioners. The disease is not discussed in our works on practice, and as cases are liable to appear in this country and to be imported by soldiers returning from Asia, we certainly owe thanks for the timely warning. As pointed out by Stiles,[1] zoology and human and comparative medicine are three closely allied callings, and the medical profession should not be backward in recognizing its indebtedness to the labors of zoologists and veterinarians.

The lung fluke is known under various names, the correct one, according to Stiles, being Paragonimus Westermanni. Perhaps the most frequent synonym is Distomum Westermanni, which is the term used by the Japanese pathologist Katsurada in a recent and valuable article.[2] Discovered by Kerbert in 1878, in a tiger, it was found afterward in man, in Formosa by Ringer, in Japan by Baelz and others. Since then it has been found in various parts of Japan, China, and Corea. The American zoologist, Ward, found it in the cat and dog, and lately it has been found in hogs by the inspectors of the Bureau of Animal Industry. It is in Japan that the disease is most common in man, there being, according to Katsurada, quite a number of endemic foci in that country, no region of which is wholly free from the infection.

The complete life cycle of the lung fluke has not yet been demonstrated. The eastern physicians regard the water-supply and mollusks as the sources of infection. Encysted or free-swimming larval forms (cercaria) will in all probability be the stage in which the parasite enters its final host—man, cat, dog, tiger, hog (Stiles). The manner in which the worm, 8 to 16 mm. long, 4 to 6 mm. broad, 2 to 5 mm. thick, enters the lung is not known. Once here the eggs are laid, which may be expectorated as such and which do not develop until they have left the host. Some observers describe the development of a ciliated embryo—miracidium—from eggs subjected to a temperature of 30 C. The fate of these embryos under natural conditions is not yet known.

The disease in man, produced by Paragonimus Westermanni, was named parasitic hemoptysis by Manson in 1880, and this is the name it seems destined to bear in English literature. As indicated by the name, hemoptysis is the chief clinical symptom. The sputum is dirty red to brown, due to the presence of the eggs, which are microscopic—about 80 to 100 mikrons long and 48 to 60 broad. Blood is present intermittently; cough is common, but not constant. As many as 12,000 eggs may be expectorated daily. It is evident that unless careful microscopic examination of the sputum is made the cases would naturally be mistaken for tuberculosis. The eggs are oval, brownish-yellow, one end being broader than the other, and provided with a thin shell. The contents are surrounded by an additional membrane and show a clear, rounded body, granular cells and clumps. The disease does not appear to be very dangerous as to life. Katsurada, in a community in which the disease is endemic, found the parasites in the lungs in but four of the cadavers subjected to autopsy in his institute. Recovery may occur and patients live for years if the eggs are confined to the lungs. Embolism of worms and eggs into the brain may take place, and cases of Jacksonian epilepsy due to this cause are described by Yamiagiwa, Katsurda and other Japanese observers. This event renders the prognosis unfavorable.

The pathologic changes have been studied, especially in Japan. Katsurada describes the lesions in four cases. Small cavities or cysts are found in the lungs, particularly under the pleura, surrounded by newly-formed tissue and containing the worms and their eggs together with detritus. The cavities communicate with bronchi, a fact that seemingly points to the bronchial tubes as the routes of entrance. It is thought that the hemorrhages result from the rupture of capillaries and smaller arteries in the walls of the cavities. The granulation tissue in the walls of the cavities not rarely contain multinuclear giant cells, which Katsurada regards as foreign body giant cells. Areas of scar tissue are also present in affected lungs. In the brain the embolized ova produce a multiple cortical encephalitis with giant cells. Similar foci containing eggs have been found in the liver, mediastinum, diaphragm, and elsewhere.

The lung fluke disease being present in the dog, cat and hog in this country, it stands to reason that infection in man may occur. Perhaps unrecognized cases already have occurred. So far no specific treatment is known. The underlying principles of an intelligent prophylaxis are indicated in what has been said in the

* See Editorial, xxxv, p. 1633.

1. Proc. Phila. Path. Soc., 1901, iv, 59-79. Abstract of paper by Stiles and Hassall on The Lung Fluke, to appear in xvi, Annual Report of the Bureau of Animal Industry.

2. Ziegler's Beiträge, 1900, xxviii, 506-523.

foregoing. Stiles advances the existence of this disease as an argument for courses in tropical medicine, and certainly opportunities should exist in this country for training men for medical duties in the tropics.

THE LATERAL-CHAIN THEORY OF IMMUNITY

Long before the day of bacteriology it was known that an attack of some diseases conferred protection from subsequent attack by the same disease, and various more or less fanciful explanations of this phenomenon were offered. As, gradually, it became known of a number of diseases that they were due to the action of minute forms of vegetable life, better crystallized conceptions of the disease-process, as well as those of recovery and immunity, were possible. The morbid process may be attributed to the reaction between the tissues of the invaded body and living vegetable cells, together with the products of their vital activity, and recovery and immunity, when they occur, may be considered merely as phases in this process, as a result of something added to or abstracted from the body. Much difference of opinion has existed and much discussion has been waged as to how recovery is brought about and immunity is induced. In order that the first event shall take place it is necessary for the invading bacteria to be destroyed or eliminated, and for the establishment of the second, either an antitoxin must be introduced from without or generated within the body; and it is with regard to the manner in which these results are brought about that agreement has been wanting. Of the several views put forward, that of Ehrlich has, perhaps, been received with greatest favor. This is known as the lateral-chain theory of immunity. It is based largely upon experimental evidence, and affords an ingenious explanation of the processes that are supposed to take place in the development of immunity following recovery from infectious diseases acquired naturally or induced artificially.

The cell is believed to consist of a nucleus, or central group, and to be provided with various lateral processes—in the sense in which these terms are used in organic chemistry. The cell may be injured by the entrance of the poison generated by the bacteria, in accordance with its chemical affinity, into combination with one of the numerous processes, which it does not destroy, and from which it is separable under certain conditions. This relation, which is established through a special molecular group of the toxic body, constitutes the channel through which the actual poison exerts its influence upon the central group, whose disturbance represents the true disease. If this influence is excessive the central group dies; otherwise it will do what it is physiologically accustomed to do, viz., throw off the process that has become unnecessary for its existence—by combination with the poison—and replace it by a new process—a regenerative procedure that, like all such processes, is completed only through redundancy of growth; or, as is thought by some, the detached and greatly increased lateral-chain material breaks up the combination between the poison and the cell. In this way active immunization is brought about. The chain substance generated in excess to replace chains that have become useless, and thrown into the circulation, also represents the antitoxin, which, after recovery from disease, enters into combination with the toxin by reason of its clinical affinity, and, thereby, after recovery from disease acquired naturally or induced artificially, protects the individual against the poison introduced and thus renders him immune. The blood serum of such a person, impregnated with lateral chains, is also capable, if introduced into a second person, who receives the toxin in question, of neutralizing the latter, or, if introduced subsequently to the poison, combining with it. Immunity depends upon chemical combination of the toxin with the antitoxin. In the process of active immunization the body itself prepares the immunizing material, while in passive immunization the body receives the material from an actively immunized body. In the first event the cell-body is active; in the second it is not called upon. When the cell-body has generated antitoxin for a long time the immunity is more protracted, but in the second event only so long as antitoxin can be believed to be still present in the blood. As the combination depends upon chemical affinity the immunity is specific. Only that one among the many lateral chains neutralizes the toxin that is capable of uniting with it by reason of its chemical affinity, and this relation is mutually reciprocal. The production of the immunizing substance is attributed to a nutritive function of the central group of the cell, but passive immunization is provided with the weapon for its defense by active immunization from the material that this has produced in excess of its own needs.

The lateral-chain theory of immunity has been invoked to explain also the elimination of the bacteria that must take place in order for recovery to occur. It is, accordingly, assumed that the bacteria, in accordance with their chemical constitution, cause the throwing off of a lateral chain which unites with the protoplasm of the bacteria and through the intermediation of one of its complexes attracts a fermentative substance contained in the serum which effects a solution of the bacteria.

HAZING AND MEDICAL COLLEGES.

A recent occurrence in an eastern medical college does not speak very highly for the maturity, manliness and scientific spirit of the undergraduates of the institution. A professional school is generally supposed to be free from some of the idiotic puerilities that have been so frequent in institutions for primary culture, and hazing, we had supposed, was being left in the remote past by men who had gone far enough to choose the profession of medicine. The student, however, in the college referred to, who was maltreated in a certainly unpleasant and mortifying way, and who brought

his tormentors into a police court, has been ostracized, it is said, by the whole school, including his own class. The transaction does not reflect any special credit on these students.

MISSOURI'S NEW PRACTICE ACT.

While the medical practice act that has just passed the Missouri legislature is in the line of progress generally, it is to be regretted that it gives to masseurs, who call themselves osteopaths, a legal right to treat the sick in that state. Osteopathy, however, is a Missouri product, and special influences were doubtless at work in its behalf. One of the legislators, opposing the bill as a whole, in a published statement calls attention to the point that ought to have been manifest to others of his colleagues. He asks: Why are physicians of the recognized schools obliged to be examined and to pay for the privilege, while osteopaths are exempt? The bill, he says, discriminates against all schools of medicine except osteopathy, and therefore is class legislation. It would be a pity if this alleged fact should balk the purpose of the act, as he says it will, on the ground of unconstitutionality. These masseurs certainly ought to be subjected to some regulation, even in Missouri, where this latest moonshine product originated.

CONSUMPTION CURES.

Since public attention has been focused upon tuberculosis, the number of consumption cures has multiplied almost daily, and in the editorial advertisement of one of them, in a New York paper, their number up-to-date is given as 153. They range from burying in carrion, which is perhaps the most repulsive, through every possible form of remedial treatment up to the metaphysics of "Christian science," and human credulity would seem to be pretty nearly exhausted, if it were not actually inexhaustible, on this subject. It is a curious inconsistency of the human mind that it can take in at once the terror of an incurable disease, and this belief in the multiplicity of its cures. It is in fact a snatching at straws in many cases. Consumption is not an incurable disorder, and probably many more patients with tuberculous infection recover than succumb to the disease, but this is due to hygienic conditions and natural resistance; at least it has been so in the past. At the present time we are learning to utilize well-known principles in combating this disease, but specific medication for its cure does not seem to be as yet on any scientific or well-established clinical basis, though, as a lay paper says, "it is a cold day when there is no consumption cure announced."

BIOLOGIC TESTS OF THE PROTEIDS IN VARIOUS MILKS.

The most important nutritive substances in milk are the proteids. It is of essential importance for the perfection of substitutes for mother's milk that the nature of the proteid constituents of various milks is understood more clearly than heretofore. The question whether the proteids in the milk of various animals are identical may be a very important one indeed. In order to gain some insight into this problem Schütze[1] resorted to the method suggested by the experiments of Bordet, Metchnikoff and others on hemolysins, spermotoxins, etc., and injected one lot of rabbits, at frequent intervals, with increasing doses of sterilized cow's milk, a second lot with goat's milk, and a third with the milk of a woman. After about three weeks of this treatment the serum of the rabbits acquired the power of coagulating the milk with which it had been injected. But this power is specific in the sense that the serum of rabbits treated with cow's milk coagulated cow's milk only and not goat's or woman's milk, and vice versa. This shows conclusively that the proteid molecules of various milks differ from one another. It was long ago learned that patients do not utilize the milk of various animals in the same degree, some doing better than others on the same milk. Schütze also found that when milk is boiled for half an hour it is no longer coagulated by its specific lactoserum, thus demonstrating that heat greatly modifies the molecular structure of the proteids. It remains to determine the exact degree of heat necessary to sterilize milk without causing much or any change in the structure of its proteid molecules. It seems that each animal species has its own peculiar milk, and it must be regarded as settled that it is impossible to make preparations from cow's milk that will have the same composition as human milk. At the same time it is not denied that artificial feeding may give excellent results. Lactoserum may become, however, an important agent in determining the degree of exact composition of the proteids in the various preparations offered as substitutes for human milk. This biologic test again shows the manifold variety of the products of cells, and in a much more striking manner than the chemical analysis has been able to do up to the present time. It seems that Fisch,[2] by analogous experiments, obtained similar results to those of Schütze. The field offers many inviting opportunities for further studies.[3]

THE GERM OF SMALLPOX.

The germ of smallpox has heretofore received no general recognition, though the conviction that variola is a germ disease is unavoidable. The latest on this subject is to be found in the *British Medical Journal* for February 23, in which are two communications bearing on this subject. Dr. M. Funck, director of the Institut Sérothérapique, and chief of the bacteriologic laboratory of the University of Brussels, reports the results of his studies in this direction and the finding, in vaccin and smallpox pustules, of morphologically identical organisms which he considers as the cause of vaccinia and variola. These appear under three forms, representing different stages of the same protozoon: 1, an isolated green sphere showing slow movements; 2, the same infecting epidermic cells, and 3, a morula form consisting of agglomerated sporoblasts; the last is the one most frequently found in old vaccins, while the first form is more common in perfectly fresh material. The inoculation of these organisms into susceptible animals produced all the symptoms of vaccinia

1. Zeitschr. f. Hyg. u. Infektionskr., 1901, xxxvi, 5-8.
2. St. Louis Cour. of Med., February, 1900.
3. See also JOURNAL A. M. A., March 9, p. 672.

and the subsequent immunity. In the pustules of confluent smallpox the same elements were found and their behavior will be described in a forthcoming paper. From these facts, Funck concludes that variola and vaccinia are identical, that vaccinia is only the attenuated form of smallpox, and that the immunity it produces is not an exception to the general laws of specific immunity. The discovery of the protozoon is not claimed as a new one, as its presence in vaccin corpuscles was recognized by L. Pfeiffer—in 1887—whose work is highly spoken of by Funck. That bacteria are not the active agents in vaccinia the author considers proved by the fact that he finds vaccin matter after a certain period absolutely free from microbes, though still active, and the pustules thus produced are also themselves sterile. This seems to have some important practical bearings and probably explains the well known better action of ripened vaccin. The second communication is by Monckton Copeman, medical inspector to the local government board in England, who describes zoogleа-like masses found in collodion capsule cultures of vaccin lymph sealed up and placed within the peritoneal cavities of rabbits and dogs, the method being the same as that followed by Nocard and Roux in studying the micro-organisms of bovine pleuropneumonia. The fluid contents of these capsules was found capable of producing typical vaccinia in the calf. He has since demonstrated apparently similar organisms in genuine smallpox in man. Whether these zooglea masses are the same as the third type of manifestation of the sporozoon of Funck is not entirely clear, but they are described as "made up of bodies resembling spores, only the periphery of which took the stain." There is no record of the detection of any actual microbe. It seems possible that we will at least have light thrown on the etiology of this disorder, the first in which artificial immunity was secured, but one of the last so far to evade our search for its germ.

THE SURGICAL TREATMENT OF ASCITES DUE TO CIRRHOSIS OF THE LIVER.

It is taught generally that ascites in cirrhosis of the liver is due to mechanical obstruction of the portal circulation. Where the portal congestion is relieved through existing collateral channels, ascites may be absent. Cases of cirrhosis with ascites have been recorded in which the formation of more or less extensive peritoneal adhesions, due to repeated tappings or other causes, has been followed by recovery from ascitic accumulations. Ascites in cirrhosis of the liver may be regarded, then, as an indication that sufficient collateral circulation can not be established spontaneously, most likely on account of absence of some of the natural but inconstant communications between the portal system and the general venous system. Packard and LeConte[1] discuss the surgical treatment for the relief of the ascites of cirrhosis, brought to the attention of physicians by Talma, and first carried to a successful issue by Drummond and Morison. The various methods employed all aim at producing a collateral circulation through peritoneal adhesions. Packard and Le Conte have collected, from the literature, twenty-two cases in which surgical measures were resorted to for relief of ascites. The actual results are difficult of succinct statement, but contrasting the worst view with the best construction there is found an operative mortality somewhere between 23 per cent. and 7 per cent., and the recoveries run between 41 per cent. and 64 per cent. These statistics can not be regarded otherwise than as encouraging. The method is still on trial, and an accurate estimate of its value is not yet possible. Enough has been learned, however, to show that surgical treatment of ascites in cirrhosis is not absolutely contraindicated for the reason that removal of ascites is directly detrimental to health and life; for it has been urged by some that ascites in cirrhosis is an expression of toxemia, and that its removal would not tend to benefit the patient. Le Conte recommends that an incision be made to the left of the median line, under local or chloroform anesthesia, and that the parietal peritoneum over the liver, spleen and omentum be dried and gently rubbed with a gauze sponge, the same treatment being applied also to the surface of the organs, and the omentum stitched to the anterior abdominal wall with two or three stitches of catgut. In the meantime the ascitic accumulation may be drained off through a suprapubic opening in which a drainage-tube may be left if the latter can be cared for properly. Otherwise both wounds should be closed at once. Drainage is regarded as useful for three or four days until the adhesions become firm, but great care must be used to prevent infection. Packard and Le Conte conclude that the operation has won a distinct place, and that in the future the suitability of particular cases for the operation may be more clearly established than is the case at present. They recommend the operation in cases of pure portal cirrhosis where persistent and well-directed medical treatment is followed by insignificant results. As yet operation is not indicated in other forms of cirrhosis. In the diagnosis of cases for contemplated operation, care should be taken to eliminate syphilitic cirrhosis, in which recovery is possible under proper medicinal treatment. The relief of ascites in patients with atrophic cirrhosis would be a blessing, as otherwise constant treatment and repeated tappings are necessary and the sufferers are doomed to perpetual invalidism. The earlier the relief comes, the better, because then the liver has more of a chance to regain its functions by compensatory hyperplasia in the event that the process of contraction is brought to a standstill.

1. Am. Jour. of the Med. Sci., 1901, cxxi, 251-270.

GERMAN ANTIVIVISECTION BIGOTRY.

The Prussian cultus minister, it is said, has established a detective bureau to watch all medical literature for cases of questionable operations and experiments. It is evident that the antivivisection bigotry and outcry against fictitious cruelties is not entirely confined to America, and there is some comfort in the recognition of this fact, though it does not cause any serious discomfort here so long as the antivivisectionists are unable to interfere with perfectly legitimate work, as in their ignorance they are inclined to do. The Germans have one advantage over us, however, in that these misguided enthusiasts have not been able there to interfere with necessary sanitary measures, such as vaccination, as they have to some extent in this country and in Great Britain.

Medical News.

CALIFORNIA.

A quack was recently fined $100 in Los Angeles for practicing medicine without a license.

In San **Jose,** a man who has been travelling through the state under the title of the "Old Quaker Doctor," has been arrested, the result of investigations by a joint committee from the Pastors' Union of San Jose and the Santa Clara County Medical Society.

Three **"Indian doctors,"** who secured the deeds to a ranch near Santa Rosa in exchange for an alleged practice in that place, and who were sued on account of misrepresentations, have been defeated in court, the deeds to the property annulled and the ranch returned to its original owners.

DISTRICT OF COLUMBIA.

Honorary Membership.—The Imperial Medical Society of Constantinople, Turkey, at its meeting February 15, elected Surgeon-General Wyman, of the U. S. Marine-Hospital Service, to honorary membership. This is the oldest scientific body in Constantinople, has done much to improve the sanitary condition of the Empire of Turkey, and, as an aid to its work, receives the patronage and protection of the Sultan.

GEORGIA.

Waycross, on account of the prevalence of scarlatina, has decided to prohibit public gatherings of all kinds, including religious services, for two weeks.

A hospital for incurables was opened in Atlanta, March 2, by the Atlanta Circle of King's Daughters and Sons. It has accommodation for ten patients and is under the medical charge of Dr. James M. Brawner.

Smallpox in Atlanta is to be under the control of hospital and charities committee of the city council, provided the ordinance committee's recommendations are approved by the council. This will make the position of the local board of health rather an anomalous one.

In **Atlanta,** four physicians who inspected cases of smallpox were paid $190 each for the service, or at the rate of $5 a visit. The council reversed its action and requested a refund. Two doctors complied, and now the council has passed an order returning the amount refunded.

ILLINOIS.

An isolation hospital, to cost about $3000, is to be erected in Springfield.

Smallpox is reported in Anna, 50 cases; Belleville Township, several cases; Cogden, 1; Petersburg, 1 new case, and Tallula, 1 case.

The Galesburg Sanatorium has been incorporated by Dr. Ewing Van D. Morris, H. M. Chase and Fred H. Holmes, with a capital stock of $75,000.

Typhoid fever is epidemic in Rock Island. The health officer, Dr. George G. Craig, Jr., reports 376 cases of the disease between Nov. 1, 1900, and March 1, 1901. He claims that the infection is due to city water and urges that the inlet pipe be examined.

Reporting death.—A bill introduced in the assembly, March 7, provides that it shall be the duty of every surgeon who performs a surgical operation and of every physician who advises and arranges for the same, after which death results within thirty days, to report the same to the coroner of the county within twenty-four hours. It shall be the duty of the coroner to call a competent physician, who has had no previous connection with the case, to make a thorough investigation of all the circumstances before the coroner's jury and report the same as the statute provides in other cases. Violation of the provisions is made a misdemeanor punishable by a fine of $500 or thirty days' imprisonment.

Chicago.

Michael **Reese Hospital** was recently damaged by fire to the extent of $2000.

Dr. **Christian Fenger,** on account of distinguished service rendered in the United States and abroad, has been made a Knight of Dannebrog, by King Christian of Denmark, and has received the cross of that order.

Smallpox.—Only 9 new "suspect" cases of smallpox were reported during the week ended March 9 of which 7 were verified, and 6 of these were removed to the Isolation Hospital and 1 quarantined with the family at home. The mild type of the disease remains unchanged, only 1 death having occurred in the 134 cases treated since Nov. 30, 1900. The situation no longer causes the health department any anxiety.

Vital Statistics.—The mortality for the week ended March 9 was 478, equivalent to an annual death-rate of 14.18 per 1000. The chief causes of death were: respiratory diseases, including tuberculosis, 196; heart diseases, 38; nervous diseases, 31; Bright's disease, 25; violence, 26. An excess of 44 deaths over the number recorded for the week previous is interpreted by the health department as the beginning of a period of rising death rates after six weeks of unprecedentedly low winter mortality. Increased frequency of the germs of pneumonia and influenza in the laboratory examinations made for physicians indicates these as the diseases to be most dreaded and to be most guarded against.

Effects of Weather.—March weather is proverbially trying in Chicago and the catarrhal condition caused by raw winds, dampness and sudden changes of temperature favors the growth and activity of the germ of all diseases of the throat and air-passages. Hence the health department cautions against exposure to cold and wet, to the debilitating effects of overheated and poorly-ventilated rooms, street-cars and other places; and, the desirability of undereating rather than overeating at this season of the year. The observance of Lent in its dietetic feature, is a sound hygienic measure, in the opinion of the department.

INDIANA.

Dr. Hiram W. Bowman, St. Joe Station, has been appointed coroner of De Kalb County.

A public hospital is to be established in Bloomington, and the committee which has the matter in charge already has a fund of $3000.

Smallpox patients have filled the Indianapolis Isolation Hospital, and the board of health is now considering the problem of the disposition of additional cases. There are now fifty-three persons under quarantine in the city.

Indiana Medical College, Indianapolis, is to have a new building four stories in height, thoroughly equipped, heated by steam and lighted by electricity. The building committee has awarded the contract which calls for a completion of the building by September 1.

IOWA.

The County Hospital of Louisa county, at Wapello, has been completed at a cost of $10,000. It is thoroughly furnished and equipped and is ready to receive patients.

The Fairfield Hospital Association has named as members of the medical board of the hospital, Drs. J. Fred Clarke, Calvin Snook and John V. Bean, Fairfield, and Dr. Samuel K. Davis, Libertyville.

A tract of land, 200 by 300 feet, was donated by the city council of Cedar Rapids, March 9, as a site for a hospital, which is to be erected this season by the Sisters of Mercy, at a cost of not less than $50,000.

Dr. Marion R. Hammer, Newton, was found guilty of assault with intent to commit murder, March 2; the motion for a new trial was overruled, and he was sentenced on March 5, to 3½ years in the penitentiary at Fort Madison.

The medical department of the state university, at Iowa City, suffered to the extent of $200,000 by fire March 10. The medical building was entirely destroyed. As the school would have closed in three weeks, its work for the year will not be seriously crippled.

KANSAS.

Dr. Frank McCallum, Kansas City, who went as volunteer to the Philippines two years ago, has been made captain and assistant surgeon of volunteers.

One thousand cases of smallpox in the state, and 500 of these in Crawford and Cherokee counties, are given by the secretary of the State Board of Health as the number on March 7.

The State Board of Health has been named by the governor, and the recommendation sent to the senate for approval. The following are nominees: Dr. S. Jay Crumbine, Fort Dodge; Robert J. Morton, Greent; B. J. Alexander, Hiawatha; S. W. Williston, Lawrence; G. W. Hollembeak, Cimarron, and others.

MARYLAND.

Baltimore.

Dr. Aaron Friedenwald has been elected president and Dr. Abraham B. Arnold, treasurer of the Baltimore branch of the Alliance Israelite Universelle, for the ensuing year.

The Woman's Medical College celebrated the twentieth anniversary of its founding, February 22, at the college building. The committee in charge of the exercises consisted of Drs. Eugene F. Cordell, John G. Jay and Pearce Kintzing.

Mortality Rate.—The mortality from pneumonia and bronchitis has created alarm. Many physicians attributed it in large measure to unheated street-cars. From Nov. 1, 1900, to Feb. 18, 1901, there were 498 deaths from pneumonia and 102 from bronchitis. During the present session, 45 cases of pneumonia have been admitted to the Johns Hopkins Hospital, with a mortality of 28.8 per cent. Seventeen recovered by lysis.

Appointment.—Dr. Clarence B. Farrar, a graduate of the Johns Hopkins University, has been added to the staff of the Sheppard and Enoch Pratt Hospital for Nervous and Mental Disease, as clinical and laboratory assistant, and provision has been made for young graduates of medical schools, as resident assistant physicians, that they may devote themselves to the special study of nervous disorders. An effort is made to exclude all but curable patients, although a few chronic cases are temporarily admitted. The net amount received from the bequest of Enoch Pratt, after the expenses of the litigation, was $1,069,300.

Hazing by Students.—There has been trouble at the University of Maryland's School of Medicine, on account of the hazing of a freshman, who, in the dissecting room had his mustache cut off with a pair of dissecting scissors. By the advice of the Dean, as he says, he had the offender arrested and fined. This created bad feeling, and he was pelted with rotten eggs and other articles and roughly jostled on attempting to attend lectures. The medical faculty has passed resolutions forbidding the practice of hazing and authorizing the dean to suspend any student found guilty of maltreating, molesting, or in any way interfering with, any other student. The hazee now announces that he may resume his studies in a few days.

MASSACHUSETTS.

Dr. Richard H. Thompson, Malden, has been appointed city physician.

The Emergency Hospital at Springfield was opened February 26, and is under the charge of Drs. E. V. Hardwick and R. W. Brayton.

A state sanatorium for consumptives is the aim of a bill introduced by Senator Fitzgerald, which appropriates $150,000 for this purpose. The sanatorium, if established, will probably be located in the mountains in the western part of the state.

The Hospital for Consumptives, Boston, will be located on Marcella Street, and the mayor has recommended an appropriation of $80,000 for its equipment and maintenance. There are now four institutions in Boston where consumptives receive free treatment.

MICHIGAN.

Two health officers, Dr. Michael D. Ryan, president of the Saginaw Board of Health, and the health officer of Gilmore Township, Isabella County, are ill with smallpox.

Dr. Beverly D. Harison, Sault Ste. Marie, secretary of the State Board of Health, who was not reappointed by Governor Bliss, refused to surrender his office and was sustained in his claim by Attorney-General Owen, who holds that the term of office does not expire until October

The Health of Michigan.—For the month of February, compared with the preceding month, pneumonia, pleuritis, inflammation of the kidney, scarlet fever, erysipelas and whooping-cough were more prevalent; and typhoid fever, inflammation of the bowels, intermittent fever, diphtheria, smallpox and measles were less prevalent.

By the will of Mrs. Palmer, who died March 7, and who was the widow of Dr. A. B. Palmer, of the medical department of the University of Michigan, Ann Arbor, $20,000 is bequeathed to build a new ward in the hospital, and $15,000 for the maintenance of free beds in the institution.

The state contagious disease inspector, Dr. George E. Ranney, Lansing, has gone to Boyne Falls, to investigate a smallpox epidemic at that place. The disease has been diagnosed by an outside physician as chicken-pox, and the lumbermen are said to be determined to break quarantine and threaten to fight their way through if they are opposed.

MINNESOTA.

Medical inspection of schools in Minneapolis, by volunteer inspectors, commenced March 11.

A detention hospital for the temporary care of persons insane, or supposed to be, was advocated by the Ramsey County Medical Society at its last meeting.

A bill has been introduced, authorizing practicing physicians to compound medicine under the same restrictions placed on druggists without securing pharmacists' licenses.

The license and control of massage and bath parlors, faith healers and mind readers is provided for in a bill providing that the council or other governing body of any city or town may prescribe license fees and reasonable rules for their control.

The report of Health Commissioner Dr. John M. Robinson, Duluth, shows that 98 per cent. of the smallpox patients in the city had not been vaccinated within seven years, and that 267 out of the 309 patients, or 86.4 per cent., had never been vaccinated.

MISSOURI.

Lutheran Hospital, St. Louis, recently opened its new additions, containing twenty rooms for private patients, a modern operating-room, diet-kitchens, dining-rooms for nurses, etc. It has been furnished by various organizations connected with the Lutheran churches of the city.

The Hall medical bill has passed house and senate and now awaits the signature of the governor to become a law. The opponents of the bill employed all the obstructive tactics known to adroit parliamentarians, without avail, and now the "Christian Scientists" have given up the fight and retired from the field.

Hospital Staff.—The German Hospital, Kansas City, has the following medical staff for the year: Drs. Julius Bruehl, Charles H. Lester, Robert T. Sloan, Lincoln G. Taylor, Charles F. Wainwright and Isadore J. Wolf, on the medical side; Drs. Jacob Block, George O. Coffin, Andrew L. Fulton, George Talley, Louis W. Luscher, and E. Van Quast, on the surgical side; Drs. Blencowe E. Fryer and John H. Thompson, oculists and aurists.

MONTANA.

A military hospital, with a capacity of twenty beds, is to be built at Fort Keogh, near Miles City.

The bill to create a state board of health has been favorably considered by the house in committee of the whole, the compulsory vaccination clause being stricken out.

In Helena the members of the board of pension examiners have resigned on account of the unreasonable and unnecessary work required and the unreasonably small fees allowed.

The osteopathy bill has been passed with amendments by the senate, the amendment making it a misdemeanor to prescribe medicine while practicing under the osteopathy law, by a person not a regularly licensed physician.

NEBRASKA.

A state health inspector, with a salary of $1800 a year, is created by a bill which provides for the organization of county boards of health, to prevent the spread of contagious diseases. The bill leaves the compensation of the county inspector to the liberality of the county board.

An ultimatum has been promulgated by Health Commissioner Dr. Victor H. Coffman, Omaha, in which he calls the attention of physicians to the fact that it is the duty of the health department to take cognizance of all sudden deaths, accidents and emergency cases. The police and health departments are to be notified, and physicians who fail to give notice to the health commissioner are subject to fine.

Medical Staff.—The medical staff of the County Hospital, Omaha, is as follows: Drs. Andrew W. Riley, Salon R. Towne, Willson R. Bridges and William F. Milroy, medicine; Drs. John E. Summers, Jr., Charles C. Allison, H. P. Hamilton, August F. Jonas and John C. Anderson, surgery; Dr. Charles Rosewater, obstetrics; Dr. H. Clayton Sumney, dermatology; Drs. Harold Gifford, Henry L. Burrell and Henry B. Lemere, ophthalmology and otology, and Drs. Ewing Brown, Fred Rustin, gynecology.

NEW JERSEY.

Dr. Daniel M. Dill, Newark, has been appointed superintendent of Essex County Hospital for the Insane.

Dr. Francis W. Bennett has been appointed surgeon and physician to the Pennsylvania Railroad Company, at Atlantic City.

Mob law ruled in Orange, March 11, when the isolation hospital which is being erected by the board of health, was demolished.

Dr. **Chauncey V. Everitt,** Jersey City, has been appointed city physician in succession to his father, Dr. John R. Everitt, who resigned.

Medical Library at Orange.—By the generosity of the widow of the late Dr. William Pierson, the physicians of the Oranges have become possessed of a library of 8000 volumes. For the present the books will be placed in the building in course of erection to the memory of Dr. Joseph William Stickler, whose estate contributed another library of value along other lines. The local physicians have named a committee of organization, to report, at an early date, on a plan embracing lecture halls as well as accommodations for readers.

NEW YORK.

Dr. **Joshua J. Sweet** has been appointed health officer of Unadilla.

Dr. **Charles D. McCarthy** has been appointed health officer of Geneva, for a term of three years, at an annual salary of $300.

Utica has appointed fifteen ward physicians who, with two exceptions, receive a salary of $100 per annum, the two receiving $125 each per annum.

The January deaths in the state numbered 12,524, or 2000 above the average, the deaths from acute respiratory diseases being 2720. There were 2570 deaths at and above the age of 70 years—as many as under 5 years.

Influenza in New York.—The State Board of Health has issued a statement relative to the prevalence of la grippe in this state, since its appearance in 1889. The number of deaths each year, from the disease, is as follows: 1890, 5000; 1891, 8000; 1892, 8000; 1893, 6000; 1894, 3000; 1895, 5000; 1896, 2750; 1897, 3000; 1898, 2500; 1899, 7000; 1900, 11,500. The affection has varied greatly in severity in different years; it seems likewise to have varied in virulence in different localities and to have shown various types, likewise in the rapidity of its spread. It is evidently communicable from the individual directly, possibly immediately, and conveyed in infected clothing. Like all zymotic diseases susceptibility to it varies; unlike some, immunity does not follow a previous attack. The state is now in the course of the twelfth recurrence of the disease, affecting the mortality of December by about 300; it increased the number of deaths in January by probably 3000, and was still progressing during February.

German Hospital.—This Buffalo institution was opened to the public on March 10. The building reflects great credit on the German citizens who have worked so unremittingly in behalf of the institution. The hospital will be non-racial and non-sectarian. The following staff is announced: Internal medicine, Drs. Conrad Diehl, Emil S. Tobie and Thomas Lathrop consulting, and Drs. Henry C. Bushwell, William C. L. Meisburger, Julius Ullman and Robert Hebenstreit, attending; surgery, Dr. Roswell Park, consulting, Drs. Marcello Hartwig, Herman Mynter, John G. Meidenbauer and Henry G. Bentz, attending; gynecology, Dr. Matthew D. Mann, consulting, Drs. Charles H. W. Auel, Max C. Breuer, Herman E. Hayd and Sigmund Goldberg, attending; obstetrics, Dr. Charles H. W. Auel, consulting; diseases of children, Drs. Ludwig Schroeter, Charles Weil and Herriott C. Rooth; eye and ear, Drs. Lucian Howe and Julius Pohlmann, consulting; Dr. Jacob Goldberg, attending; nose and throat, Drs. George F. Cott and W. Scott Renner, attending; skin, Dr. Ernest Wende, consulting, Drs. Grover W. Wende, Jacob M. Kraus and Alfred E. Diehl, attending; genito-urinary, Drs. Alois Joki and Julius Reister; nervous, Drs. William C. Krauss, Floyd S. Cregs and Herman G. Matzinger; pathology, Drs. William G. Bissell, Harvey R. Gaylord and J. A. Miller.

New York City.

The **Academy of Medicine** is to receive the medical library of the late Dr. Abbott Hodgman, by his will.

A **fire** at the Eastern District Hospital, Brooklyn, March 8, caused a panic among the patients, but was put out before any injury was done to the inmates.

A **practitioner** in Brooklyn has been found guilty of filing a false death certificate, in the case of a patient who died from smallpox, and has been fined $100.

The **Eye and Ear Hospital** has opened its new pavilion for the treatment of communicable diseases. It is the gift of Mrs. Eveline Bliss and her daughters, in memory of the late James N. Platt.

The **Bureau of Contagious Diseases** reports that smallpox increased in the city during February, 139 cases having been reported. Since November 5, 311 cases have been reported, with 42 deaths.

Library Books and Communicable Diseases.—A resolution has been passed by the Bureau of Health providing that no books shall be loaned from the public libraries to persons affected with contagious diseases. It will be the duty of the assistant medical inspector of the bureau to furnish a list of such patients, and a list will be sent daily to the different public libraries.

OHIO.

Dr. B. B. Taylor, who has been on duty at Columbus Barracks for the past year, has been made captain and assistant surgeon of volunteers.

In Cincinnati, two men have been arrested on the charge of using the prefix "Dr." without having complied with the law requiring registration.

Dr. R. D. Sikes, Newark, has been promoted to medical examiner for the Baltimore and Ohio Railroad Company, and has been transferred to Allegheny, Pa.

The Huron Street Hospital, Cleveland, is to be freed from debt. John D. Rockefeller has promised to pay $5000, if the balance, $10,000, is secured by October 1. The trustees have already raised $3000 of this amount.

PENNSYLVANIA.

Smallpox is still epidemic at Scenery Hill, whose population is composed mostly of negroes. Up to March 7 21 cases had been reported. A rigid quarantine is being maintained.

Dr. R. L. Taylor, medical inspector of Pittsburg, states that during the year forty-five cases of smallpox were treated at the Municipal Hospital. In his opinion the disease came from twenty different sources. The municipal hospital, it is believed, is inadequate to the needs of the city.

School Directors May Quarantine.—Representative Hamilton, of Jefferson county, has introduced a bill providing that directors of schools in townships, in addition to the powers vested in them, shall also be given the power to prohibit, from attending school, any child or person who resides in a building in which epidemic disease exists. The following are specified: Smallpox, varioloid, scarlet fever, typhoid fever, yellow fever, relapsing fever, diphtheria, etc.

Philadelphia.

Dr. **H. C. Wood** is in the South, on account of his health.

Jefferson Medical College has asked an appropriation, from the legislature, of $300,000 for the establishment of a new hospital, and other improvements.

The deaths from tuberculosis, during the past year, were 2717; from pneumonia, 2915. The mortality from diphtheria was lower than for previous years.

Surgeon H. W. Austin, in command of the national quarantine in the Delaware River and Bay, has been given orders to provide for night inspections of vessels.

Dr. **A. H. Cleveland** has been elected laryngologist and rhinologist to the Presbyterian Hospital, a department which has only been recently established by the board of trustees.

The University Medical Magazine, with the March number, becomes the *Medical Bulletin of the University of Pennsylvania.* It will hereafter contain no advertising matter and will be somewhat changed in form, the policy of the publication, however, not being altered.

TENNESSEE.

The Greenville Board of Health has raised the quarantine against all smallpox-infected points.

The new building for the Memphis Hospital and Medical College will be started early in April, and is to be ready for occupancy in November.

The Central Hospital for the Insane, Murfreesboro Pike, Nashville, is much overcrowded, and the management has asked for an appropriation of $20,000 for a new building.

Meharry Medical College, Nashville, graduated a class of 40, at its twenty-fifth commencement, February 27. Bishop Walden, of Cincinnati, delivered the address to the graduating class.

TEXAS.

Dr. James A. Sadler, one of the oldest physicians in Sherman, is in a critical condition from cerebral hemorrhage.

Dr. S. E. Hudson, Austin, has severed his connection with the *Texas Medical Journal,* Dr. F. E. Daniel assuming control.

The following appointments to the Medical Examining Board are announced: Dr. Samuel F. King, Sherman; Dr. Stephen A. D. Moore, Van Alstyne, and Dr. Winston B. Markham, Denison.

VERMONT.

Dr. Donly C. Hawley, Burlington, secretary of the State Medical Society for the past fifteen years, and president of the Board of United States Examining Surgeons, for pensions, has been elected mayor of Burlington on the republican ticket.

At the annual meeting of the directors of the Fanny Allen Hospital, Burlington (Winoaski Park), the following staff was elected for the present year: attending surgeons, Drs. W. G. E. Flanders, D. C. Hawley, P. E. McSweeney and O. W. Peck; attending physicians, Drs. A. T. Arkley, Lyman Allen, A. J. St Germain and J. W. Sheehan; consulting surgeons, Drs. L. M. Bingham, Wm. B. Lund, W. R. Prime and J. D. Hanrahan; consulting physicians, Drs. A. P. Grinnell, C. M. Ferrin, W. J. Labelle, H. Pepin and E. A. Burdick; specialist in diseases of eye, ear and throat, Dr. H. E. Lewis; consultant, Dr. Chietien Zaugg; pathologist, Dr. J. H. Linsley.

WISCONSIN.

Dr. Ernest L. Bullard, Waukesha, has been appointed superintendent of the State Hospital for the Insane at Mendota, vice Dr. W. A. Lyman, resigned.

Major John R. McDill, Milwaukee, who went to the Philippines as surgeon of the Thirtieth Volunteer Infantry, and who made so exceptional a record there as to be recommended for promotion by General McArthur, has decided not to return with his regiment, but will remain in Manila and assume control of a private hospital, the first of its kind to be established there.

GENERAL.

Army Dentists.—Dr. John S. Marshall, Chicago, president of the examining board of dental surgeons, U. S. Army, announces that candidates for appointment as dental surgeons in the army will be examined in the following named branches: anatomy, physiology, histology, physics, chemistry, metallurgy, dental anatomy and physiology, dental materia medica and therapeutics, dental pathology and bacteriology, orthodontia, oral surgery, theoretical operative dentistry, theoretical prosthetic dentistry, practical and operative, and practical prosthetic dentistry. An average of 75 per cent. will be required in each subject for theoretical examination, and 85 per cent. in the practical examinations.

Appropriations.—Congress, at its last session, appropriated $35,000 for the erection of the necessary buildings and quarters for a laboratory for the investigation of infectious and contagious diseases, and matters pertaining to the public health, under the direction of the surgeon-general of the U. S. Marine-Hospital Service; and authorized the secretary of the navy to transfer to the secretary of the treasury five acres of the old Naval Observatory grounds, for use as a site for the laboratory. The same bill contained appropriations of $50,000 for a boarding vessel at Reedy Island, Del., and $40,000 for a boarding vessel at Port Townsend, Wash., quarantine stations, and $29,500 for improvements at Delaware breakwater, Cape Fear, Savannah, Columbia River and Reedy Island quarantine stations.

CANADA.

Carberry, Manitoba, is to have a new hospital, erected on the cottage plan.

Dauphin, Manitoba, will erect a modern hospital in the immediate future.

Winnipeg's vital statistics for February were: 110 births, 62 male and 48 female; 71 deaths, 40 male and 31 female; marriages, 39.

The Mount Royal cemetery bill has passed the legislature of the province of Quebec. It provides for the erection of a crematory on the cemetery premises in Montreal, the first of its kind in the Dominion of Canada.

Dr. Wilfrid T. Grenfell, superintendent of the National Mission to Deep-Sea Fishermen, at present in Montreal, established the third hospital in Labrador last summer, and it has accomplished much good in relieving the sufferings of the fisher people.

Winnipeg General Hospital.—The number of patients treated at this institution during the past twelve months was 2649. In the out-door department there were 1435 consultations. Of the indoor patients, 1684 came from Winnipeg, 785 from other places in the province, 150 from the other provinces, and 30 from the United States.

Vaccination Crusade.—Dr. Laberge, Montreal's city health officer, has started a vaccination crusade in order to protect the city from the introduction of smallpox from surrunding centers of infection. He states that the health officials are meeting with less opposition to vaccination in Montreal every year. The old smallpox pavilion contains only four beds, which shows the facilities Montreal has for coping with the disease.

St. John Hospital.—The annual work done at the public hospital, St. John, N. B., last year, shows that 1038 patients were treated, 446 being medical, 486 surgical and 106 eye and ear. The amount expended on hospital maintenance was $28,291.59. The out-door department treated 1102 cases, medical and surgical, and of these 1029 received prescriptions. There were also 412 eye and ear cases, of which 398 received prescriptions.

Neglects Smallpox.—Montreal's civic council is scarcely up to modern hygienic requirements. Recently the secretary of the provincial board of health notified the council that six cases of smallpox were in the outskirts of the city, and suggested that immediate steps be taken to have a temporary isolation hospital improvised. The council showed its appreciation of the urgency of the matter by ordering the communication to lie on the table for a week.

Health Legislation.—The government bill respecting public health has passed its third reading in the Quebec legislature. By it the secretary of the provincial board of health will receive a salary of not more than $2400 per annum; and the board of health may further provide for the appointment of analysts, a statistician and the other necessary officers. There are provisions, too, to the effect that unvaccinated children may be prevented from attending the schools of the province.

Ontario Vital Statistics.—Complete returns have been received regarding births, marriages and deaths occurring in Ontario during 1900. There is an all-round increase, but the most encouraging report is that referring to births, which shows that the birth-rate of the province has increased substantially during the year. This may be accounted for by the fact that there have been a good many prosecutions before magistrates' courts for failure to register births under the provisions of the registration act. The following shows the births, marriages and deaths for the past three years, 1898, 1899 and 1900 respectively: births, 46,599, 44,705, and 46,019, being an increase of 1314 over the previous year; marriages, 15,375, 16,514 and 17,123, an increase of 609; deaths, 26,370, 28,607, and 29,594, an increase of 987. Dr. Bryce, secretary of the Ontario Board of Health, estimates the birth-rate last year at 19.19 per thousand, as compared with 19.4 in 1899 and 20.4 in 1898.

Lodge Practice in British Columbia.—On two or three former occasions notice has been taken in the columns of THE JOURNAL with regard to the action of the Victoria Medical Society in refusing to accept lodge practice from the fraternals of that city. The very latest phase of the situation looks as though the medical men were going back on their former laudable resolutions. During the past summer, the special committee on the matter, appointed by the fraternals, has not been by any means idle. Petitions were circulated throughout British Columbia, praying that the medical act of the province be amended to permit of the entrance of the practitioners of the other provinces of the Dominion or practitioners duly qualified from the British Isles, without taking the prescribed examinations of the medical council of the province. So numerous have been these petitions, and so fully have they been signed, that the medical practitioners of Victoria are on the eve of returning to the fraternal fold, and thus renouncing their former worthy and honorable action. Surely the legislature of the province, before whom the petitions now lie, will not permit of such rank coercion.

From the Yukon.—Dawson, as reported in the columns of THE JOURNAL recently, is still overrun with mad dogs. The epidemic has assumed alarming proportions and has been so serious as to compel a conference between the police, medical men and leading citizens regarding the best method of dealing with the conditions present. Many persons have been bitten, and the present condition of affairs is a menace to public health and safety. The consensus of the medical opinion is that the disease is undoubtedly rabies, of the type called "dumb rabies." The matter is a serious one from another point of view, a first-class "husky" or "malamite," trained to the sled, being worth from $300 up. Those individuals who have been bitten had their wounds immediately cauterized; but a sense of insecurity and uneasiness prevails among the citizens, as the medical men state that the disease may develop at any time within eighteen

months. The citizens are allowed to shoot a dog on sight, when it shows the least evidence of madness; and it is feared that the continuation of the epidemic may cause the extinction of the entire dog species in the Yukon territory. A supply of the Pasteur serum has been ordered.

Consumption Sanatorium for Nova Scotia.—In the legislative assembly of Nova Scotia, last week, Premier Murray laid on the table the report of the special committee appointed by the government to make recommendations in regard to the establishment of a sanatorium for the treatment of the consumptives of the province. The report recommends a single sanatorium, and that the location be either Dutch Village, near Halifax, or on the shore of the Bedford Basin, at or near the village of Bedford. The congregate plan should be adopted for a small number of patients—accommodaton being provided for twenty patients, arranged on the plan of the sanatorium of Dr. Phillips, at Craigleith Hospital, Edinburgh, with a competent and special trained nurse and no medical resident superintendent, but two regular medical men to be appointed to make specified visits every week. The committee expressed the opinion that the treatment of consumptives should be carried on near large centers of population; and that the sanatorium act of the province, enacted at the last session of the legislature, be amended so that it would provide for municipalities receiving government aid for sanatoria, the same as provided for in the Ontario act. Dr. A. P. Reid, secretary of the provincial board of health, endorses the recommendations, but thinks it would be better to have a regular resident medical superintendent. He disapproves also of the Atlantic seabord as not being a suitable site for the purposes of a sanatorium.

FOREIGN.

Among deaths noted abroad are those of Dr. Bawater J. Vernon, F.R.C.S. Eng., January 28. He was a well-known London surgeon of St. Bartholomew's Hospital.

Professor Ostroumoff, of Moscow, retires this year from his connection with the medical faculty, after forty years of service. The students have founded a scholarship in his honor.

The pamphlet, signed by twenty professors, portraying the dangers of venereal diseases, and which is now given to each student at the German universities, has been reprinted by the Bavarian military authorities and distributed among the troops.

Unna's prize for the best work on the histology of primary cutaneous carcinoma was not awarded last year. The amount of the prize is now increased to 600 marks, and the same subject is still open to competition. Articles should be sent to the publisher of his *Monatsschrift*, L. Voss, Hohe Bleichen 34, Hamburg.

Prizes Offered by Belgian Academy.—The Académie Royale de Médecine de Belgique offers a number of prizes open to foreigners. Among them are the following: 800 francs for the best work with new research to determine the relations between the neurons—closed, Jan. 20, 1903; Alvarenga prize of 800 francs for the best work in any branch of medicine, received before January, 1902; anonymous prize of 8000 francs for the best work on pathogenesis and treatment of diseases of the nerve-centers, especially epilepsy—this prize can be divided; 30,000 francs will be added to this prize in case a cure for epilepsy is discovered, or some similar progress is reported.

New Mexican Publication.—The *La Cirurgia Contemporanea* is a new periodical from the City of Mexico. It is the organ of the Mexican Surgical Society, and will be published monthly. It will cover the field of general surgery, gynecology, otology, laryngology, ophthalmology and genito-urinary diseases, and is under the editorial direction of Ramon Macias. The first issue, with its introductory, makes a very favorable impression and contains articles on spinal analgesia, hysterectomy and colostomy, the latter two with illustrations. The editors appear to have broad and liberal ideas as regards the field of medicine which they represent, and the new publication starts out under the most favorable auspices and is likely to be a creditable exponent of Mexican surgery.

Progress of the Plague.—According to cable reports, 15 new cases of bubonic plague were reported in Cape Town, S. A., on March 11, and 97 persons were isolated on account of having been exposed. On the same date two colored persons died in the street, and one European on being removed to the hospital. The affection is extending to the more prosperous classes and the removal of several thousand Kaffirs from the city is being consummated, the government having decided to remove the people from one-third of the city's area and cleanse it. One soldier employed at the castle has been attacked. Since the outbreak there have therefore been 119 cases and 25 deaths. According to the *British Medical Journal* of March 2, 400 died of plague in the City of Bombay on February 24 and 25.

Medical Appointments to the King.—According to *The Lancet*, the king has appointed Lord Lister to be sergeant-surgeon-in-ordinary; Sir William MacCormac, Bart., K.C.V.O., F.R.C.S., and Sir Thomas Smith, Bart., F.R.C.S., to be honorary sergeant-surgeons. Other appointments are—to be honorary physician to the king: Dugald McEwan, M.D.; Sir James J. L. Dennet, K.C.B., M.D., inspector-general of hospitals and fleets; Sir John Watt Reid, K.C.B., M.D., LL.D., director-general of the medical department of the navy (retired); Adam B. Messer, M.D., inspector-general of hospitals and fleets; Henry C. Woods, C.V.O., M.D., inspector-general of hospitals and fleets (extra). To be honorary surgeons to the king: Sir James Jenkins, K.C.B., M.D., inspector-general of hospitals and fleets; Timotheus J. Haran, inspector-general of hospitals and fleets; Sir James N. Dick, K.C.B., director-general of the medical department of the navy (retired); William H. Lloyd, M.D., inspector-general of hospitals and fleets; Alfred G. Delmege, M.V.O., M.D., deputy inspector-general of hospitals and fleets (extra).

LONDON.

Hunterian Oration: Evolution of the Human Skull—Man and Ape.

The Hunterian Oration at the Royal College of Surgeons is usually devoted to a somewhat general description of John Hunter's life and work, and the influence of his example and principles on the growth of surgery. The orator of this year, Mr. Macnamara, the ophthalmic surgeon, instead, selected for his discourse a single biological theme. John Hunter laid the foundataion of the superb museum which, after his death, was purchased by the nation and committed to the care of the college, and which has since been enriched by many benefactions. From its treasures, Mr. Macnamara selected the "unrivalled collection of skulls," and endeavored to show the manner in which this collection throws light upon the sources from which the populations of Europe have been derived. He stated that the numerous characters common to man and the larger apes prove that they had descended from the same stock. The inability of apes to speak he explained by the fact that the anterior portion of their skulls underwent early ossification and this prevented the growth and development of speech centers. In man, on the other hand, this ossification does not take place until the age of 20, and development is possible. In prehistoric times the skull has not this power. The skull found in the tertiary formation in Java is clearly on the boundary line between men and apes, and the human skulls of the pre-glacial and inter-glacial periods more closely resemble those of the chimpanzee than of existing Europeans. With these skulls of low development are found the simplest and roughest implements. After the glacial period the skulls, though of a low type, are still better developed. Europe was then peopled by the Africo-Europeans or Iberians, a short, powerful, long-skulled race.

Mr. Macnamara attributes the better development of the Iberians to the alteration in the climate and fauna of Europe, which compelled them, in the struggle for existence, to make better use of their brains. They were followed by a race of tall people, with large, well-formed skulls, who possessed domestic animals, and used a language which still survives. After them came a tall, broad-skulled Turanian people, then a short, small-boned, broad-skulled Mongolian race. Notwithstanding many changes on the European continent, the distinctive characters of some of these races remain. In the countries which border the Mediterranean, the people are still short, dark and long-skulled (Iberians. North Germany and Scandinavia contain a large proportion of the tall, fair, long-skulled Teutonic race (Aryan), while a vast triangle, with its apex in central France and its base in eastern Russia, is inhabited by the descendants of the broad-skulled Turanian and Mongolian races.

Extraordinary Fraud—A Man Obtains His Own Death Certificate.

A man aged 35, described as a Dublin medical student, came to lodge in London and called on a doctor, minutely describing to him the symptoms of Bright's disease. He also brought urine for analysis, and it contained a large quantity of albumin. One day, when the doctor called, he appeared to be very drowsy and dangerously ill. Early on the following morning a man resembling the patient called on the doctor, but he was clean shaven and in good health, while the patient had a heavy moustache. The visitor posed as the brother of the patient, who, he said, had passed away in great suffering during the

night. He was given a certificate of death. In pursuance of his usual practice the doctor visited the chamber of death. In the dimly-lighted room what appeared to be a human body was perceptable on the bed, but on examination the "corpse" proved to be a dummy composed of pillows, blankets, boots and a poker. The man who obtained the certificate, on being questioned, said: "I am the dead body," and asserted that he had committed the deception to deceive his people into the belief that he was dead. A search in his box, however, showed that he had a life policy of $1000. For having made a false declaration for the purposes of death registration, he has been sentenced to nine months' imprisonment. It appears that the man was really ill and had a high temperature, but simulated the special symptoms of Bright's disease.

Eclipse Blindness with Thrombosis of the Retinal Artery —Hemorrhage into the Vitreous.

At the Ophthalmological Society, Dr. R. D. Batten has reported the case of a woman aged 28, who watched the eclipse on May 28, 1900, without other protection than "screwing up the eyes" and looking between her fingers held close together. Objects immediately appeared black, anl, next morning, she could see only "portions of things." On June 6, when she was first seen, she had lost the lower half of the field of vision in the left eye, V = 6/18. Above the disc was a white patch, possibly an absorbing hemorrhage, and the hazy edematous retina obscured the view of the disc and retinal vessels. The edema increased until June 20, and then rapidly cleared, leaving a patch of choroidoretinitis above the disc. One of the upper-retinal arteries was occluded and the others were reduced in size. The vitreous opacities cleared and the macula was unaffected. V. improved in the injured eye to 6/12. In the right it was 6/6.

Mr. Lawford said that he had observed three cases of eclipse blindness, but without ophthalmoscopic signs. In all, however, the scotomata had persisted with deterioation of vision. Mr. Jessop had jublished three cases. In all, vision improved, but there was a slight permanent scotoma. Mr. Bokenham gave details of two cases, in one of which there were retinal hemorrhages. V. improved from 5/60 to 6/12, but there was a marked central scotoma. Dr. G. A. Berry thinks the scotoma is usually permanent in the worst cases. The public is not aware that blue glasses are worse than useless in looking at the sun and bright lights. It is the blue and violet rays which do damage. In Russia, red or yellow glasses are employed.

Correspondence.

Port Limon and Yellow Fever Reports.

TREASURY DEPARTMENT, OFFICE OF THE SUPERVISING SURGEON-GENERAL, MARINE-HOSPITAL SERVICE, WASHINGTON, D. C., March 8, 1901.

To the Editor:—In THE JOURNAL of March 2, under "Correspondence," is a letter from Dr. Edmond Souchon, president of the Louisiana State Board of Health, which takes exception to some of the suggestions contained in a paper by Dr. Nicholas Senn, published in THE JOURNAL of January 19. Dr. Souchon quotes Dr. Senn's suggestion of placing the port of New Orleans under the jurisdiction of the U. S. Marine-Hospital Service, etc., and makes the following statement: "This expression is most unfortunate, especially as coming so soon after the signal failure of the Marine-Hospital Service to recognize the existence of yellow fever in time at Port Limon last year. That service admitted the existence of the fever there several weeks only after the distinguished representative of the Louisiana State Board of Health, Dr. Will H. Woods, had advised the board of the presence of the fever at Limon, and after cases had occurred on fruit vessels plying between that port, New Orleans and Mobile. Mobile was guided by the reports of the representative of the U. S. Marine-Hospital Service and escaped infection only by enforcing the most rigid measures. Although Mobile had not actually recognized Limon as infected, she treated vessels from there as if the port was infected. Finally she did proclaim Limon infected."

In refuting Dr. Souchon's statements, I think it necessary to first disavow any inspiration either from myself or, so far as I know, from any officer of the Service, prompting Dr. Senn in his expression of opinion, but I can not allow Dr. Souchon's statements to go unquestioned.

So far from the signal failure of the U. S. Marine-Hospital Service to recognize the yellow fever in time at Port Limon last year and only admitting its existence there several weeks after Dr. Woods had advised the Louisiana State Board of Health of its presence, I have to state that the advice of Dr. Woods, as referred to, was about the middle of July, whereas by reference to the *Public Health Reports* of May 4, 1900, page 1072, it will be seen that Acting Assistant Surgeon Thomas, of the Marine-Hospital Service, cabled from Port Limon as early as April 20 the existence of one fatal case of yellow fever in that port. Moreover, as early as April 20—see *Public Health Reports* of that date—a report from Acting Assistant Surgeon Hodgson, specially detailed to obtain information concerning Central American ports, was published bearing date of April 7, in which he states as follows: "Port Limon, Costa Rica, is the cleanest town south of the Rio Grande on the seacoast, but I consider it the most dangerous. I think that yellow fever is endemic in the port." etc.

Dr. Souchon's letter would leave the impression that no notice of the condition of this port was given until his own officer advised the Board of the fever at Limon in July, and it is to relieve this impression that I quote the above publications. Now, so far as the report of Dr. Woods referred to is concerned, the Service never has and does not yet admit its correctness, but to be entirely on the safe side the bureau published a cable from Acting Assistant Surgeon Thomas, dated July 17 and published in the *Public Health Reports* of July 27, as follows: "Woods reports to State Board Health, New Orleans, La., 1 case yellow fever, 1 suspicious. Drs. Carson, Steggall, Aguilar and myself disagree with Woods," and in *Public Health Reports* of August 3, under date of July 19, Dr. Thomas explains at length his reasons for disagreeing.

It is understood that Dr. Woods, after reporting this case as yellow fever, reported to his board four other cases as yellow fever, all of which were seen by three of the consultants in the first case, by whom they were not even regarded as suspicious. No official reports of these as yellow fever cases have ever been received at this Bureau, but the charts and the statement from Acting Assistant Surgeon Thomas showing them to be malaria are on file.

August 18 and 22, cases of yellow fever which occurred on vessels were reported by Acting Assistant Surgeon Thomas. (See *Public Health Reports*, August 31, p. 2164, and September 7, p. 2276). On October 31 another case occurred on a vessel and was duly reported by Acting Assistant Surgeon Thomas over the cable. (See *Public Health Reports*, Nov. 30, 1900, p. 2929). On October 31 there was one case of yellow fever reported in Port Limon, which was duly cabled.

It is true that Mobile was guided by the reports of the Marine-Hospital Service, but as to enforcing most rigid measures they were no more than are ordinarily enforced under like circumstances.

I deem the above statements necessary simply to show the watchfulness and care of the Marine-Hospital Service at Port Limon last season.

To summarize, in April, a representative of the Service made a full report on the sanitary conditions of Port Limon. On April 20 a case of yellow fever was reported by the acting assistant surgeon stationed there. July 17 a suspicious case, with the full facts, was reported by the acting assistant surgeon, who, however, denied, together with three other prominent physicians, the diagnosis of Dr. Woods, who stood alone in his belief. The remaining cases of yellow fever that occurred at Port Limon, four in number, were duly reported as soon as they occurred.

All the above facts were published. Respectfully,

WALTER WYMAN, M.D.
Surgeon General, M.-H. S.

Committee on National Legislation and Annual Conference, Washington, D.C.

To the Editor:—By an amendment to the quarantine laws the last Congress authorized the Surgeon-General of the U. S. Marine-Hospital Service, with the approval of the U. S. Sec-

retary of the Treasury, to designate and mark out the boundaries of the quarantine grounds and anchorages for vessels at the United States quarantine stations, and imposed a penalty of fine or imprisonment or both for the violation of any part of the act or any regulation made in accordance with the act.

Another section of the amendment provided for quarantine measures to apply to vessels arriving in collection districts without entering a port of the United States. This is intended particularly for fishing-smacks and other small craft which leave Cuban ports for smuggling rum and tobacco into the United States along the coast of Florida; these vessels were liable to convey infection by landing their sick on this coast.

To further aid in the enforcement of the quarantine laws the act gave authority to national quarantine officers to administer oaths.

The above law was recommended by the Committee on National Legislation of the AMERICAN MEDICAL ASSOCIATION, and approved, at their annual conference, held at Washington, D.C., Feb. 20 and 21, 1901, of the legislative delegates from the various states of the United States. Concerted action in the future will, it is hoped, secure more legislation indorsed or proposed by the national conference with the legislative committees of the AMERICAN MEDICAL ASSOCIATION.

H. L. E. JOHNSON, M.D.

Chairman Committee on National Legislation, AMERICAN MEDICAL ASSOCIATION.

Quarantine Against Plague.

NEW YORK, March 8, 1901.

To the Editor:—Dr. Doty is quoted by Dr. Bracken, in THE JOURNAL of March 9, p. 677, as having said that "rats collected at New York, from coffee-carrying vessels from Rio Janeiro and Santos, during the recent outbreak of plague in those two places, were examined bacteriologically, and in no instance was there the slightest evidence of bubonic plague." I add that neither did Dr. Doty's bacteriological examination disclose bubonic plague in the body of the dead laborer on one of the lighters to which the cargo was being removed in mid-bay—who suddenly died of pneumonia. Yet the man's hands had been in direct contact with the rat-infected cargo, and had breathed into his lungs its dust. Credit is due President Murphy, of the New York Board of Health, for his firmness in not permitting the port quarantine service to unload those ships at their piers. Had that been done, some sick rats could have come ashore to infect our sewers by their droppings, or by transferring their infected fleas to our rats. And this plague pneumonia, if the bubonic stage was delayed, might have gained its foothold here. The Bombay Medical Union claimed that in some such way their city became infected from sugar cargoes from Hongkong, which were unloaded at the granary-piers, the feeding places of the Bombay rat.

Dr. Doty's position, at the time of our controversy, was wholly on the side of the coffee importers and the New York Chamber of Commerce. ALBERT S. ASHMEAD, M.D.

Washington's Governor and Medical Practice.

SPOKANE, WASH., March 4, 1901.

To the Editor:—I noted with great pleasure your very just criticisms on the conduct of Governor Thomas of Colorado, in a recent issue of THE JOURNAL, also the manner in which the profession has turned him down. I take pleasure in informing you that our state legislature has similarly rebuked John R. Rogers, the present governor of the State of Washington.

At the beginning of the present session of our legislature one of the representatives from this county, Dr. C. G. Brown, introduced a bill which was a slight improvement over our former medical act, in that it prevented osteopaths and other quacks from practicing without having been properly licensed. It also made possible conviction of parties practicing medicine without the necessity of proving that they actually received money for the services. In addition to this, it has a provision for recognizing the licensed graduates from other states, having regular licensing bodies. This bill, after passing both houses, was vetoed by the governor in a long harangue on the blessings of osteopathy, which was published in all the papers in the state. The bill was immediately reconsidered, through the efforts of Dr. Brown, and has now passed both houses with a safe majority, and is a law. Yours very respectfully,

C. P. THOMAS, M.D.

[THE JOURNAL of March 9 editorially commented on this action of Washington's governor, the news of the above reprimand to his veto having been received after that issue of THE JOURNAL was on the press. ED.]

Subscriptions for Ollier Monument.

To the Editor:—The undersigned constitute a committee similar to those formed in several European countries for the purpose of receiving subscriptions for a monument commemorative of the distinguished scientific services of Prof. Leopold Ollier. Among the members of these committees are Lord Lister, Professors von Bergmann, Czerny, Durante and other leading men. The municipality of the city of Lyons has dedicated an open space adjacent to quarters of the various academic faculties on the border of the Rhone, named in his honor "Place Leopold Ollier."

The profession of this country is well aware of the great services rendered by Professor Ollier, especially in the domain of plastic and osseous surgery. His labors have been most fruitful in the domains of surgery, of physiology and pathology.

The committee hopes to raise not less than $1000 as a testimonial from the profession of America. Check should be forwarded to Dr. W. W. Keen, 1729 Chestnut street, Philadelphia, at as early a date as possible.

COMMITTEE:—Robert Abbe and William T. Bull, New York; P. S. Conner, Cincinnati, Ohio; A. T. Cabot, Boston; Howard A. Kelly, Baltimore; W. W. Keen, Philadelphia, Rudolph Matas, New Orleans; Wm. J. Mayo, Rochester, Minn.; W. F. McNutt, San Francisco; Roswell Park, Buffalo, N. Y.; Clayton Parkhill, Denver, Colo.; Maurice H. Richardson, Boston; Nicholas Senn, Chicago.

Married.

GEORGE A. BROUGHTON, M.D., Oxnard, Cal., to Miss Mary Livingston, of San Francisco, Cal.

WILLIAM A. CAVEN, M.D., Hazelwood, Pittsburg, Pa., to Miss Margaret Elizabeth Wirebach, of Monessen, Pa., February 28.

GEORGE W. MCCOY, M.D., U. S. M.-H. Service, formerly of Bristol, now stationed in San Francisco, Cal., to Miss Edith Miller, of Pennsylvania, at San Francisco.

Deaths and Obituaries.

Richard J. Dunglison, M.D.

Dr. Richard James Dunglison died at his home in Philadelphia, March 5, from dropsy and heart failure, following an attack of pneumonia a year ago. He was born in Baltimore, Nov. 13, 1834, and came of a medical family, his father being Dr. Robley Dunglison, professor of institutes of medicine and medical jurisprudence in Jefferson Medical College, and his grandfather, Mr. John Leadam, a noted surgeon of London, England. He was graduated from Jefferson Medical College in 1856, but after a few years relinquished the practice of medicine for the field of medical literature. He was editor of two editions of "Dunglison's Medical Dictionary," and of the "History of Medicine," of which his father was the author; was editor of *Dunglison's College and Clinical Record* for fifteen years, one of the original editors of the *Philadelphia Medical Times*, for several years Philadelphia correspondent of the *Medical Times and Gazette* of London, and a frequent contributor to the medical literature. He was the author of the "Practitioners' Reference Book;" "A Handbook of Diagnosis, Therapeutics and Dietetics"; "A New School of Physiology and Hygiene"; "An Elementary Physiology and Hygiene," and "The Present Treatment of Diseases." He also translated Guersant's "Surgical

Diseases of Children," from the French. From 1862 to 1865 he served as acting assistant surgeon in the United States Army, in various military hospitals in Philadelphia, for the last two years of that time being executive officer of the Filbert Street Hospital. He was a member—and for many years treasurer—of the Philadelphia County Medical Society; and of the College of Physicians of Philadelphia; a member and, in 1875, corresponding secretary of the Pennsylvania State Medical Society; of the American Academy of Medicine, of which he was secretary and treasurer for several years and vice-president in 1890. He was for many years a member of the AMERICAN MEDICAL ASSOCIATION, of which he was assistant secretary in 1876, and treasurer from 1877 to 1894. He was also assistant secretary of the International Medical Congress in 1876, and corresponding secretary of the Centennial Medical Commission in the same year. In 1877 he served as secretary of the executive committee and chairman of the finance committee of the Ninth International Medical Congress. He was also corresponding secretary of the Alumni Association of Jefferson Medical College from its inception, and for many years honorary local secretary of the New Sydenham Society of London.

John Dean Ross, M.D., University of Pennsylvania, 1832, died at his home in Williamsburg, March 5, aged 95. He founded the Blair County Medical Society in 1848, and was the first president. He was president of the State Medical Society in 1865, and at the time of his death was its oldest member. He had been a member of THE AMERICAN MEDICAL ASSOCIATION for forty-seven years.

Charles F. Knight, M.D., Medical School of the Valley of Virginia, Winchester, 1852, one of the pioneer physicians of Missouri, formerly superintendent of State Asylum No. 2 for the Insane, one of the founders and the first president of the St. Joseph, now the Ensworth Medical College, died March 4, at his residence in St. Joseph, after a lingering illness, aged 71.

J. Stone Armstrong, M.D., Jefferson Medical College, Philadelphia, 1879, a prominent physician of Buffalo, and at one time grand master workman of the A. O. U. W. of New York State, died at his home, March 4, from pneumonia, after a short illness, aged 61.

R. Wilson Carr, M.D., University of Maryland, Baltimore, 1852, a member of the Walker expedition to Nicaragua, a surgeon in the Confederate Army, and for a quarter of a century a resident of Sedalia, Mo., died at his home in that city, March 5, aged 70.

George Holmes Bixby, M.D., Harvard Medical School, for many years a gynecologist in Boston and a frequent contributor to the literature of that specialty, died at his home in Boston, February 26, after many years of invalidism, aged 63.

James Chapman, M. D., New York University, 1852, for many years a surgeon in Medina, N. Y., and in the Civil War, died from paralysis, after an illness of several years, at his home in Medina, February 27, aged 77.

Thomas H. Morrow, M.D., Northwestern Ohio Medical College, Toledo, 1889, of Erie, Mich., while driving across the tracks in Toledo, Ohio, February 27, was killed by a train.

Aloysius X. Whiteford, M.D., Washington University School of Medicine, Baltimore, 1873, died at Parkville, near Baltimore, February 28, after a lingering illness, aged 52.

Lawrence J. McDonough, M.D., University of Vermont, Burlington, 1886, died at St. John's Hospital, Lowell, Mass., after an illness of three months, March 2, aged 45.

S. A. Mercer Given, M.D., University of Pennsylvania, 1887, Clifton, Pa., died at that place, February 23, aged 41, from diabetes, after a long illness.

Fred L. Thayer, M.D., Harvard Medical School, 1871, died after a long illness, from Bright's disease, at his home in West Newton, Mass., aged 53.

Frederick Hibbard, M.D., Medical College of Ohio, Cincinnati, 1884, died suddenly at his home in Little Hocking, Ohio, February 23, aged 40.

James C. Smiley, M.D., who had practiced in Kewanee, Ill., for more than thirty-five years, died at his home in that town, March 3, aged 70.

Tillie Dittenhoefer, M.D., University of Oregon, 1896, died suddenly from heart disease, February 22, aged 40, in Portland, Ore.

Alpheus J. Clemmons, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1879, died at St. Joseph, Mo., March 8.

William G. M. Seiple, M.D., University of Pennsylvania, 1867, died at his home in Lehighton, Pa., March 1, aged 55.

William B. Young, M.D., Jefferson Medical College, Philadelphia, 1845, died at his home in Higley, Fla., February 22.

Robert Stone, M.D., College of Physicians and Surgeons, New York, 1858, died in New York City, March 7.

Book Notices.

MASTERS OF MEDICINE. THOMAS SYDENHAM by John Frank Payne, M.D., Oxon. Fellow and Harveian Librarian of the Royal College of Physicians. Cloth. Pp. 264. Price, $1.25. New York: Longmans, Green & Co. 1900.

The life of Sydenham is not "an open book," and the paucity of material referring to the man and his work makes a satisfactory biography out of the question. The author has placed before the reader all that is known of the "great physician," but no attempt is made to fill in gaps which reliable records have left. To those who had formed a high opinion of Sydenham, without inquiring why he has been placed on the pedestal he seems to occupy in British medicine, the reading of this book will be a disappointment. Not that the author has not done his work well, for he has, but the records do not appear to show that Sydenham was such a remarkable man. If asked what Thomas Sydenham had done that he should be regarded so highly, few would be able to give a satisfactory answer. He is supposed to have first described that form of chorea which still bears his name, but his biographer quotes Sturges as saying that Sydenham's original description of it was so imperfect that the disease could hardly be recognized therefrom, and the biographer confesses that "it is not a very complete picture of the disease." He introduced a liquid form of opium, a preparation similar to wine of opium of later time, called "Sydenham's laudanum," and which appeared in books, under this name, till quite recently. The biographer credits this with making its originator more widely known than did his writing. His books do not show any great amount of wisdom, nor did they have any material effect on the practice of the time.

The book, however, is not only an interesting, but is also a valuable one in that it depicts the profession as it was then. It shows that quackery was just as influential at that time as it is now; and there is some satisfaction in knowing that, in this regard at least, we are no worse off than was Sydenham and his fellows.

PARALYTIC DEFORMITIES OF THE LOWER EXTREMITIES. The Principles of their Surgical Treatment. By E. Noble Smith, F.R.C.S. Edin., L.R.C.P. Lond., etc., Senior Surgeon to the City Orthopedic Hospital, and Surgeon to All Saints' Children's Hospital, London. With 51 Illustrations. Cloth. Pp. 99. Price 5 shillings. London: Smith, Elder & Co. 1900.

This little work is a general review of the aspects of paralytic deformities of the lower extremities, with especial consideration of the question of functional treatment. While brief, the work is a valuable addition to orthopedic surgery. It is fairly well illustrated.

OBSTETRIC CLINIC. By Denslow Lewis, Ph.C., M.D., Professor of Gynecology in the Chicago Policlinic. A series of Clinical Lectures on Practical Obstetrics delivered to Students and Practitioners in Cook County Hospital, Chicago, together with Remarks on Criminal Abortion, Infanticide, Illegitimacy, the Restriction of Venereal Diseases, the Regulation of Prostitution and other Medico-Sociologic Subjects. Cloth. Pp. 640. Price $3.00. Chicago: E. H. Colegrove. 1900.

Dr. Denslow Lewis has reproduced, in book form, the clinical lectures given by him in 1887 in the Cook County Hospital, Chicago. These include the majority of the subjects included under the general head of obstetric practice, and also some

sociologic papers which do not necessarily fall under the head of clinical lectures. Dr. Lewis is an able lecturer and knows how to present the cases in an interesting and edifying manner, and his lectures will be profitable reading. The student and practitioner both will find the perusal of this work instructive. We wish we could say as much in favor of the make-up of the book which is defective in several ways. The paper is of inferior quality and the changes of tints are almost trying to the eyes. It is a pity that such a meritorious volume in many respects is not better presented to the public.

ETHICAL MARRIAGE. A Discussion of the Relations of Sex from the Standpoint of Social Duty. By Delos F. Wilcox, Ph.D. Cloth. Pp. 235. Price $1.25. Ann Arbor, Mich.: Wood-Allen Publishing Co. 1900.

Ethical marriage, the author says, is a protest against the idea that the matter is to be discussed by physicians alone. This is, therefore, a popular presentation, including certain subjects which are not commonly said to be suitable for general discussion. The author's treatment is commendable in some respects, and in others open to objection. We can not say that we think the book as a whole one to be recommended to the young, notwithstanding the excellent moral tone of many of its chapters. It is a curious fact that the author idealizes a writer who is not, in the opinion of many who have glanced over his works, the most moral in his tendencies, and for that reason we should have some suspicion of his judgment on these matters. The book is well written and doubtless will be found readable, but we do not think it as good a work as some others that have been issued under the same apparent auspices.

PHYSICAL DIAGNOSIS IN OBSTETRICS. By Edward A. Ayers, M.D., Professor of Obstetrics in the New York Polyclinic. With Illustrations. Cloth. Pp. 276. Price $2.00. New York: E. B. Treat & Co. 1901.

This work is meant to serve as a guide to physicians and undergraduates in the examination of pregnant, parturient and puerperal women. It is, indeed, an elaborated case-taking chart, emphasizing all important points to which attention should be directed in the study of clinical obstetrics. In the training of medical students, in most schools of America, less care is given to practical and bedside obstetrical teaching than to any other branch of medicine. The facilities for the imparting of thorough instruction are scanty, and teaching methods are crude and undeveloped. Dr. Ayers has done good service in showing how much can be done by a competent and conscientious teacher who desires to give his students something besides systematic didactic lectures. It is a pity that the book is not printed in better style. Most of the illustrations are badly reproduced and several qualities of paper are used. The work is in no way creditable to the publishers.

Clippings from Lay Exchanges.

RARE SURGICAL OPERATION.

New York, March 7.—"A clerk in an insurance company is in St. Luke's Hospital, recovering from a surgical operation, one of the rarest known to medical science. The operation is known as gastro-anterostomy, and consists of removing the patient's stomach, cutting away several malignant growths in the vicinity of the pyloris and restoring the stomach to its former place." The patient "complained some months ago of severe pains in his stomach and was troubled with insomnia. . . . a tube inserted. . . . showed a total disappearance of all acids and a destruction of the pepsin. . . . Examination disclosed a systematic degeneration of the pancreas. . . . The stomach was cut away from the intestines and the organ was lifted completely out of its place and laid on a cushion of antiseptic clothes placed on the patient's chest. The stomach was then put back in its accustomed place. . . . But little blood was apparent throughout the whole operation. . . . The patient rallied at once and it was seen that the operation was a success."—*Evening Post*, Chicago, March 7, 1901.

MURPHY BUTTON EXPLAINED.

"A tube was inserted in Mr. ——'s abdomen leading into the intestines. . . . This tube is closed with a Murphy button, so called from having been invented to suit the case of Colonel Michael C. Murphy, the police commissioner.—*New York Tribune*, March 8, 1901.

ONE OF FORTY.

"One of the oldest and wealthiest residents of this section (Sioux City, Iowa) submitted to a delicate operation yesterday. His malady is one of the rarest in the world, less than forty other similar cases having ever come to the notice of medical men. It is called eurthro millilagia, which causes the blood to coagulate and refuse to go back to the heart. The pressure caused by the active blood against the stagnant portion causes great pain in the parts affected. . . . The operation consisted in cutting nerves controlling veins near the instep. . . . A French physician published a book in two volumes in which eurthro maliligia is exhaustively treated of and a remedy suggested. The patient sent for the books, had them translated, and has undergone the operation on the suggestion of the French specialist."—*St. Paul* (Minn.) *Dispatch.*

HOW HE SETTLED THE BILL.

"A well-known physician recently sent to the address of one of his patients a bill for professional services, and within ten days received the following letter written on the back of his memorandum: 'Dear Sur: This note was put in my box by mistake. I han't the man hee's dead and aint no relation of mine anyway. I don't see how your conshens will let you dun the dead. Why don't you live a better criston life and let live and try to meat that man who dide in heaven which is worth moar than forty dollars to enny doctor."—*Ft. Smith* (Ark.) *Elevator*, March 1, 1901.

"BONIFIED" OSTEOPATHY.

"William Hartford, a graduate under Andrew T. Still, the founder of Osteopathy, has located. . . . at Champaign, Ill. He does not pretend as having graduated from the great colleges in Europe and America, for such a thing is disgusting to an honest and meaning people, but he does claim that he is the only bonified osteopathist in Champaign county and is perfectly willing to substantiate what he says."—*Farmer City* (Ill.) *Sun.*

MEDICAL JURISPRUDENCE.

"The condition of Judge —— at the present time is more serious than at any time since the beginning of his recent sickness. . . . His son, Dr. ——, of Chicago, assisted by the local physician, is in constant attendance and everything known to the medical jurisprudence is being done to prolong his life and alleviate his suffering."—*Council Bluffs* (Iowa) *Nonpareil*, Feb. 26, 1901.

LADY ASSISTANT NEEDED.

"Dr. —— returned Monday evening. . . . He was called to Blue Earth to treat several cases of appendicitis, among them some ladies which rendered it necessary for him to take his lady assistant."—*Fond du Lac* (Wis.) *Commonwealth.*

A VALUABLE COMBINATION.

"L. L. ——, the undertaker, has just completed a course at the San Francisco College of Physicians and Surgeons, and passed his examination with 97 per cent."—*Oakland* (Cal.) *Tribune.*

GASTRIC AND STOMACH TROUBLE.

"A lady in Hedding, N. H. . . . says the after-effect of the grip was a serious gastric and stomach trouble."—*Chicago Times-Herald*, Jan. 12, 1901 (Adv.)

THE NEW SURGEON-GENERAL.

"Dr. —— left last month for San Francisco where he was appointed surgeon-general in the United States Army."—*Lawrence* (Mass.) *Telegram.*

MEDICAL SURGEON.

"Joe B.——, the medical surgeon, of Logansville, has moved to Crayon."—*Urbana* (Ohio) *News.*

APPENDICITIS.

"Dr. Swaney took another attack of Appendicitis a few days ago."—*Youngstown* (Ohio) *Telegram.*

Miscellany.

The Population of Germany.—According to the census of Dec. 1, 1900, as announced by the official organs of the empire, this is 56,345,014, of which 27,731,067 are males. Thirty-three of the largest towns aggregate 9,108,814. Since 1895 the population has run up to 7.78 per cent., the highest rate for any quinquennial period for the last thirty years.

Influence of Extract of Feces on the Blood.—Dogs and rabbits were injected subcutaneously with various extracts of fecal substances. The aqueous extract produced a marked effect on the composition of the blood, diminishing the number of red corpuscles and the amount of hemoglobin, with pronounced anemia in various organs, the animals dying of pernicious anemia. The experiments are reviewed in the *St. Petersburg. Med. Woch.*, No. 4; the results suggest an explanation of the etiology of idiopathic pernicious anemia in man.

Total Excision of Larynx.—A case of total excision of the larynx is reported in the *Medical Press and Circular* of February 16, in a man of 55, for carcinoma. The larynx was removed under complete narcosis, without previous tracheotomy, and a canula being employed only after the operation was finished. The patient wears an artificial larynx, by means of which he speaks quite intelligibly and so that he can be heard over a large room. The malignant growth occupied the whole left half of the larynx and anteriorly extended through the midline to the right hand, extending downward to the cricoid cartilage.

The Commission Evil.—The following is taken from the *Texas Med. Gaz.* for February: "We append a clipping from the *New England Medical Monthly* concerning the payment of commissions on cases referred to the surgical or other specialist by the general practitioner. There has never been a question of ethics or morality before the profession that had as little to recommend it to decent men as this so-called commission evil. The discussion of it needed only to be carried to its logical conclusion to show that, as far as his relation to the patient is concerned, there is no honorable ground left for either the man who tenders the fee or the one who accepts it. It is gratifying to see that the profession at large, whose common sense can usually be relied upon, has come to this conclusion and we will hear much less of it, in the future, than in the past. The article is written from the standpoint of 'a member of a medical society, in which the president, vice-president, secretary and various committees are all comprised in one man,' in other words, the writer himself: 'Speaking of confidence in each other brings us to another comment in our local society transactions. We view with great alarm the entrance of a commercial spirit in parts of the profession, and the birth of a son of the commercial spirit in the form of the commission evil. That would promptly destroy whatever confidence the people have in our profession as a whole, and it woud undermine the very pillars and foundation of responsible medical service. There are men in the profession whom our local society holds in reverence, and we often refer cases to them for special treatment that is better than any that we can give the patients who have put their trust in us. If one of these men were to offer us a commission for referred cases he would promptly fall from his pedestal before our very eyes, and become a statue of Achilles with his head in the mud. We are engaged in special work ourselves. We have not often been asked to give any commissions and, as a local society, we pride ourselves in the belief that certain men gave one good look at us and then did not dare to ask it. There is a homely old saying about birds of a feather having a fondness for getting close to each other, and our society believes that the commission birds will soon be distinguished as a class by that responsible element in society which knows pretty well the character of its legal, clerical and medical advisers. We believe that the giver and receiver of medical commissions will carry in their countenances the little cloud of dishonor that recognized by one's self is recognized by others.'"

Societies.

COMING MEETINGS.

Medical Society of the Missouri Valley, Omaha, Neb., March 21, 1901.

Tri-State Medical Society of Iowa, Illinois and Missouri, Keokuk, Ia., April 2-3, 1901.

Medical Association of the District of Columbia, Washington, D. C., April 2, 1901.

Tennessee State Medical Society, Nashville, April 9-11, 1901.

Florida Medical Association, Jacksonville, April 10, 1901.

Western Ophthalmological and Otolaryngological Association, Cincinnati, Ohio, April 11-12, 1901.

Medical Association of the State of Alabama, Selma, April 16, 1901.

Medical Society of the State of California, Sacramento, April 16-18, 1901.

South Carolina Medical Association, Florence, April 17, 1901.

Medical Association of Georgia, Augusta, April 17, 1901.

Louisiana State Medical Society, New Orleans, April 18-20, 1901.

Medical and Chirurgical Faculty of Maryland, Baltimore, April 23-26, 1901.

Texas State Medical Association, Galveston, April 23, 1901.

American Association of Genito-Urinary Surgeons, Old Point Comfort, April 30, 1901.

Association of American Physicians, Washington, D. C., April 30, 1901.

Austin Flint Medical Society.—This Society recently held its tenth annual banquet at Pittsburg. About twenty members were present. Dr. Joseph Stein acted as toast-master.

International Congress of Physiology.—The fifth session of this Congress will be held at Turin, September 16 to 19, in Professor Mosso's Institute. The secretary is Dr. Treves, Corso Raffaelo, 30, Turin, Italy.

Tri-State Society of Iowa, Illinois and Missouri.—The ninth annual meeting of this Society will be held at Keokuk, Iowa, April 2 and 3. Dr. Henry Hatch,, Quincy, Ill., is president, and Dr. William B. LaForce, Ottumwa, Iowa, secretary.

French Congress of Surgery.—The subjects announced for discussion at this Congress, which will meet in Paris, October 21 to 26, are "Surgery of the Spleen" and "Treatment of Tubercular Lymphadenitis," with addresses by Février and Broca.

Louisville (Ky.) Society of Medicine.—At a meeting of this Society, March 4, the following officers were elected: Dr. Richard T. Yoe, president; Dr. William A. Jenkins, vice-president; Dr. Waller O. Green, secretary, and Dr. A. Henry Falconer, treasurer.

Ingham County (Mich.) Medical Association.—The physicians of Ingham County met at Lansing for organization, March 1, and elected Dr. Frank W. Shumway, Williamstown, temporary president, and Dr. Alexander D. Hagadorn, Lansing, temporary secretary.

Tippecanoe County (Ind.) Medical Society.—The annual meeting of this Society was held in Lafayette, March 4. Dr. Milton S. Hopper was elected president; Dr. Franklin B. Thompson, vice-president; Dr. John S. Morrison, secretary, and Dr. George K. Throckmorton, treasurer—all of Lafayette.

Medical Society of the Missouri Valley.—The thirteenth semi-annual meeting of this Society will be held at the Parton Hotel, Omaha, Neb., March 21. Dr. Vernon L. Treynor, Council Bluffs, Iowa, is president, and Dr. Chas. Wood Fassett, St. Joseph, Mo., secretary.

Madison County (Ala.) Medical Society.—At a recent meeting at Huntsville, this Society endorsed the bill restricting child labor in factories, and adopted a resolution asking the representatives in the legislature to support a bill for compulsory vaccination in the state.

French Congress of Neurology.—The neurologists and alienists of France hold their congress this year, at Limoges, in August. The subjects announced for discussion are the "Physiology of the Muscle Tonus, and Modifications of the Reflexes in Case of Lesions of the Cerebrospinal Axis"; "Acute Delirium" and "Attendants in Asylums," to be presented by Crocq, Carrier and Taguet.

Laennec Society, Baltimore.—At the last meeting of this Society, Dr. W. S. Thayer read a memoir on Laennec, and Dr. Louis Hamburger spoke on "The Physical Signs of Pulmonary Tuberculosis as Described by Laennec." He exhibited a model

of the first stethoscope made by Laennec. It was twelve inches long, and a nearly solid tube with a small central canal. One end was hollowed out to contain a stopper for use in auscultating. The instrument was formed of two equal halves fitting onto each other for greater convenience in carrying. Laennec made his own stethoscopes and did not bare the chest in examinations. At the same meeting Dr. Sowers read a paper on "The Growth of Our Knowledge of Acute Miliary Tuberculosis."

Orleans Parish (La.) Medical Society.—At a meeting of this Society, recently, in New Orleans, Dr. Louis G. Le beuf reported the case of a puerpera who died on the fourteenth day from cardiac embolism, having given no previous signs other than unrest and a vague premonition of death. Dr. William Scheppegrell presented an article on "Dust as a Factor in Diseases of the Upper Respiratory Passages." As a result of the discussion on this paper it was resolved to take steps to secure the passage, by the city council, of a strict ordinance against spitting in public places. In response to an appeal from Dr. Rudolph Matas, of the American Committee on the Ollier Monument, the Society voted $25 for the fund to erect, in Lyons, a monument to this great French surgeon. A special committee was appointed to study the mosquito as a means of propagating yellow fever

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting held February 27.

Dr. George Erety Shoemaker in the chair.

Typhoid with Unusual Temperature.

DR. ELIZABETH PECK reported two cases of typhoid fever. The first was in a woman 32 years of age, and in whom nervousness was a pronounced symptom. What was striking in this case was the excessively high temperature, which often rose to 109 F., probably due to hysteria. The temperature was taken by several thermometers, simultaneously in the mouth, axilla, and rectum. It was observed that at times the temperature in one region would be higher than the others, and would alternate. The patient made an uneventful recovery.

Registration of Tuberculosis.

DR. MATTHEW WOODS read a paper on the registration of tuberculosis from the standpoint of private practice. He considers the question of registration a large one, and that probably the majority of the families of this country could point to one relative who had died from the effects of this disease. To register these cases might place a ban upon them. The boy or girl applying for a position might be asked for a health certificate showing that no member of his family had been a sufferer from consumption, and if so might be turned away as being unfit. Italy has tried registration, but the rules were so rigorous that it was abandoned. One of the most beneficent policies in the treatment of these cases is to keep from the patient the knowledge that he has consumption. We may err in the diagnosis of such cases, and he has never seen benefit result from telling the patient that he has tuberculosis. Such knowledge will cause the patient to become more despondent, and too often plunge him into debauchery. He called attention to Goethe and Michael Angelo, both of whom had suffered from pulmonary hemorrhages, the former dying at the age of 88. The death certificate would apprise the health office of a death from tuberculosis and the officials could then disinfect where necessary. Before death the patient should have instructions from the physician in regard to personal hygiene.

Home Treatment of Tuberculosis.

DR. L. W. FLICK read a paper on this subject. By "home treatment" he meant treatment where the disease had been contracted. In his experience it is hardest to keep these patients up to the usual standard of nutrition. The home treatment consists of inclosed and open treatment, the former being that in institutions; the open, where more or less liberty is allowed. Good results have been achieved by the closed treatment, and this may be the method of the future. He considers that one of the greatest drawbacks in any treatment is that the disease is not recognized early enough, and frequently not until an attack of pneumonia or influenza has occurred. Persistent indigestion, with loss of flesh might suggest tuberculosis. When the disease is first recognized, he thinks one of the most important things is to tell the patient that he has consumption, and that no patient ever becomes worse for such knowledge. As to the treatment, he usually limits solid diet to one meal, and gives large quantities of milk, frequently as much as six quarts. Eggs are also valuable, and he allows from six to a dozen a day. Pastries are to be avoided. An abundance of fresh air, both day and night, is imperative. At night the windows should be left open. During the day, the patient may be wrapped up warm and remain in the sunlight, with free ventilation. He may at times be allowed to remain out of doors, or on the roof of his home. Anywhere, so long as he gets plenty of fresh pure air. Of medicines, he relies mostly on the iodin compounds, by inunction. In some cases inhalations may be of service. Arsenic, strychnin, and iron are all good.

DR. J. C. WILSON also believes that the patient should be told that he has consumption and warned of the danger to others. Hospitals for the treatment of these cases should engage the attention of health authorities.

DR. R. G. CURTIN spoke of certain complications which might be opposed to home treatment. He believes that most patients with tuberculosis do not get enough sunlight. He referred to a case in which pronounced benefit followed an out-door life, in a change of climate, with only a simple diet. As to registration, he spoke of a case occurring at the Philadelphia Hospital, who had suffered for years with an ulcerative process affecting the lung, and had been put in the ward with cases of tuberculosis, yet he lived for years and no bacilli could be found after repeated examinations.

DR. C. M. COOPER, Edinburgh, being invited to take part in the discussion, stated that in England certain institutions have been established for the treatment of tuberculosis. As a rule these institutions only admit those patients in the early stages of the disease. The results achieved have been good.

DR. J. M. ANDERS agreed with the statements of Dr. Flick, and said that over one-half the cases of tuberculosis must be treated at home. Too little detail has been given to home treatment.

DR. S. SOLIS-COHEN said that persistent hope on the part of the physician is all-important. His experience is that if the patient is told of his condition it proves beneficial.

DR. A. V. MEIGS believes that registration would not prove beneficial.

DR. I. J. MAYS expressed doubt as to the benefits to be derived from registration.

DR. GUY HINSDALE said that, regarding the registration of tuberculosis the objections are chiefly imaginary. He does not believe in concealing from the patient the communicable nature of the disease, and thinks that if some treatment—Philadelphia treatment, New York treatment, or Boston treatment—is adopted, it is a makeshift, adopted from necessity. Cases no doubt recover there, lives are also no doubt very much prolonged by treatment, and therefore the principles that have been laid down must be applied daily. He contrasted the conditions found in a well-managed hospital with those in the homes from which the poorer patients come, the change being quite as great as when a patient with means is sent to one of our well-known sanitariums or health resorts. People who leave their homes for hospitals, sanitariums or even open resorts will do a great deal more for themselves under the new circumstances than they would have done at home. They will rise at 6 a. m., to drink mineral waters at a spring a half mile away; they will join an early procession walking barefoot on the damp grass; or they will readily conform to a regime, adapted to the needs of a tuberculous invalid, that they would soon tire of at home. The force of example helps them to keep in line with the rules best adapted for them. But left by themselves, in their homes, the patient who has some prospect of being cured will often neglect himself, and the physician may lose sight of him for long periods when the cough or other symptoms are not urgent, but when medical oversight is needed in just the same degree.

He does not think the prime requisite for treatment can be had in city homes. We do not realize how impure city air is

until we go into the forest or to the seashore. It is like trying to cure diphtheria without antitoxin, or malaria without quinin, to treat pulmonary tuberculosis without pure air, and there is no such thing as pure air in our homes, no matter how well constructed, if we make mountain or sea air the standard. There is too much dust, smoke, carbonic acid gas and other products of exhalation, not to speak of pathogenic organisms. Another objection to our city homes is the fact that under ordinary conditions, during the colder season, we are subjected to great transitions of relative humidity of the air. We leave a house heated by a furnace, in the rooms of which the air has a relative humidity of 25, 30 or 35 per cent. We pass out into an atmosphere of 60, 70 or 80 per cent. relative humidity, and so we go in and out and adapt ourselves as best we can to these variations. Under the open air method of treatment, the patient has few if any of these transitions; he takes the humidity as he finds it night and day, for the most part. If he happens to be in Colorado or New Mexico, he has dry air all the time. Here he is inclined to make his "home" out of doors, and when he accomplishes that I will thoroughly indorse the "home" treatment of phthisis.

The place where a person has contracted phthisis is *not* a good place to remain in for treatment. If the patient is too poor or too advanced in his disease to go elsewhere, we have no alternative. But it has been observed that most consumptives live or die according to their strength of character in adjusting their life wisely to their disease, and for this reason many can not to be trusted to live again among the environments in which the disease has been acquired.

JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

Meeting held March 4.

Dr. Howard A. Kelly in the chair.

Pernicious Anemia with Symptoms of Spinal Disease.

DR. THOMAS MCCRAE exhibited two cases, both males. One a laborer, aged 38, dates his sickness from December, 1898. He was able to work until March, 1900. Just before the latter date, he suffered from a carbuncle, and now complains of stiffness and numbness in his arms and legs. Knee-jerk is exaggerated. There is no complaint of the anemia, although hemoglobin is 50 per cent. and red corpuscles 2,500,000.

The second was an elderly man, whose sickness began 1½ years ago, when he fell down stairs and afterwards could not work. He complains of numbness of the limbs and holds himself stiffly, walking with stiffness and difficulty. The knee-jerks were elicited only with difficulty. Hemoglobin was 73 per cent. and red corpuscles 3,500,000.

Both patients are taking arsenic, and the first has very bad teeth, of significance in view of the recent investigations of Hunter, who believes that caries of the teeth bears an etiologic relationship to the disease.

DR. W. S. THAYER said he had seen similar cases, with marked ataxic symptoms, although none had occurred in the hospital. He regards the outlook in such cases as very bad. He has been astonished to hear the value of arsenic in pernicious anemia and leucocythemia questioned recently by a distinguished Boston clinician. There is positive evidence of its usefulness in these conditions. Sometimes this occurs with great rapidity, although he acknowledges it is but temporary.

Frequency of Gall-Stones in the United States.

DR. CELIA D. MOSHER said that the records of 1655 autopsies, 1038 male and 617 female, made at the hospital have been carefully analyzed, and Dr. Welch has assured her that no gall-stones were overlooked in these cases. Of the 1655, 6.4 per cent. were found to have gall-stones. This corresponds to the smallest prevalence reported in Europe. The majority of cases here occur after 30, and the maximum is reached after the age of 40. The condition is less frequent in the colored than in the white race, and males were affected only five-ninths as often as women. Examination of the records at the Almshouse (Bayview Asylum) shows that the paupers there have gall-stones twice as often as the hospital patients. She could offer no explanation of the greater frequency among the paupers and Europeans. As to the greater prevalence in women, she thinks it may be due to tight-lacing and the wearing of belts.

DR. H. A. KELLY said he had for some time been in the habit of examining for gall-stones, and also into the condition of the appendix, in all cases of laparotomy, and he has found gall-stones present in 8 per cent. of all his patients, and especially with ovarian tumors.

Diabetes Mellitus Associated with Hyaline Degeneration of the Islands of Langerhans in the Pancreas.

DR. EUGENE OPIE spoke of his latest researches on these bodies, which resemble the glomeruli of the kidney. They appear to have some relation to the blood. The most common lesion of the pancreas is inflammation. Diabetes does not occur in all cases of pancreatitis, and Dr. Opie has studied cases of the former, to find, if possible, the peculiarity in the pancreatitis with which it is associated. He has been able to distinguish two forms of pancreatitis. In one of these the islands are involved, in the other not, and it is with the former only that diabetes occurs. The condition found is a hyaline degeneration of the islands; the nuclei disappear and they become hemogeneous in appearance, sometimes granular. In obstruction of the pancreatic duct, as from calculus, or pressure, or in ligation of the duct in dogs, the acini are destroyed, but the islands remain intact; hence there is no diabetes in these cases. Dr. Opie, therefore, found in these peculiar lesions one cause of diabetes. Yet not all cases of the latter are associated with lesions of the pancreas, and there are still other facts regarding it which remain to be elucidated.

DR. T. B. FUTCHER said that Dr. Opie's discovery was the most important addition made, in recent years, to the pathology of diabetes. From the facts elicited, it would seem probable that the islands of Langerhans elaborate some internal secretion, which is absorbed directly into the blood, and in some way is connected with diabetes.

Carcinoma of the Male Breast.

MR. WARFIELD gave the results of his researches on this subject. There have been, altogether, 307 cases of carcinoma of the breast in the hospital, since its opening in 1889. Of these, 3 only have been in males. He has reports of 2 other male cases, which he has seen, outside the hospital, and 32 cases reported in the literature, making 37 in all. Of the 37, 18 occurred in each breast, and in 1 case the side was not given. The largest number in any decade was 13, between 60 and 70 years. In 28 there was no pain. In only 1 case was there a history of carcinoma in the family, the patient's mother having had this affection of the breast. Trauma bore a conspicuous part in the etiology in many cases. The cases that occurred in the hospital were designated in the records as "carcinoma simplex," a name to which Dr. Halsted objected as being indeterminate.

DENVER AND ARAPAHOE MEDICAL SOCIETY.

Meeting held February 26.

Diphtheria, its Treatment in Different Phases.

DR. W. K. ROBINSON read a paper on the above subject, and related the histories of six cases recently treated by antitoxin. His conclusions are that the mortality is *nil* in all cases treated the first day with antitoxin, and that very large doses of the antitoxin should be used when the case is seen late in the disease.

Case of Double Bladder, Each with Separate Ureter, with a Study of the Urine of Both Kidneys.

DR. E. P. HERSHEY reported the above rare case in a woman 28 years of age, who has been treated all her life for trouble connected with her bladder. When she was very young she had scarlet fever, and soon after that developed bladder symptoms, of which incontinence was the most annoying. Violent exercise would bring on pain. She had severe attacks of pain in the bladder, accompanied with fever and delirium about twice every year. At such times she would pass pus from the bladder. After the pus has been evacuated, which the patient learned to do by either pressing her finger upon the anterior wall of the

vagina or by taking large vaginal douches, the symptoms would abate. Dr. Hershey made a careful study of the case and found that she passes two kinds of fluids from the external orifice of the urethra at different times. She passes either urine or pus. The two are never mixed. She passes urine more frequently. The pus passes only after it accumulates for a few days. The patient knows when the pus begins to accumulate. By introducing a catheter about one inch, he can, by directing it upward, obtain normal urine, and by pointing the curve downward obtain pus. Vaginal examination reveals a vesico-vaginal diverticulum. The left kidney is palpable and tender on pressure. He has examined the patient under various conditions (postures) after having washed the two bladders separately, having previously given her various drugs—methylene blue, etc.—and the results were uniform. His diagnosis is: Left surgical kidney, double bladder, each having a separate ureter.

DR. LEONARD FREEMAN, who examined the case carefully, said that there are not a dozen instances of double bladder mentioned in medical literature. He has seen, however, several of diverticulum of the bladder. He is not sure it is a double bladder; it may be a single one with a transverse partition. He could elicit pain in the kidney by pressing upon the diverticulum in the vagina. He dwelt upon the difficulties with which the surgeon may meet when operating on such cases.

Report of Operations for Radical Cure of Hernia.

DR. C. A. POWERS reported thirty-two cases of radical cure of hernia performed during the last six years, made upon twenty-nine patients, with only one death. The death occurred in a patient 35 years of age, and in the best of health, upon whom he operated for a reducible inguinal hernia. A tumor below Poupart's ligament was found to be a femoral hernia, which was also operated on. Two days after the operation the patient became restless, had a chill, and the wound became puffy. Pus was found at the saphenous opening. Chills continued and the patient died from pyemia and septic pneumonia. Dr. Powers ascribes the fatal issue to the use of kangaroo tendon, which probably was not thoroughly sterile.

DR. LEONARD FREEMAN has seen suppuration following the radical operation for hernia, and believes it is due to infection carried by the fingers of the operator, impossible of prevention by any other method except wearing rubber gloves. It is important to find out that there are no holes in the gloves, a matter hard to ascertain. He purposely punctured gloves, and filled them with water and there was no leakage. To avoid possible injury to the gloves he used instead of needles, a ligature carrier.

DR. I. B. PERKINS reported a case in which he used two kinds of sutures, and all the kangaroo sutures suppurated.

CHICAGO SOCIETY OF INTERNAL MEDICINE.

Meeting held February 26.

The president, Dr. John A. Robison, in the chair.

Municipal Prevention of Disease.

DR. HEMAN SPALDING read a paper on this subject. He stated that every municipal health officer should be invested with great discretionary powers, to be used when the more desirable methods of persuasion and education fail to protect the public against disease. He should have the power to enforce the prompt reporting of all infectious and contagious diseases by physicians and citizens; also the power to remove any person, sick with an infectious or contagious disease, to a place where there will be no danger of communicating it to others; and the power to enforce vaccination at all times. He should have at his command a well-equipped isolation hospital for smallpox, one for diphtheria, one for scarlet fever, one for tuberculosis, and another for measles, and it would be well to have one for whooping-cough. The isolation hospital is necessary for those who have no means at home for the proper care and precautionary measures necessary to prevent the spread of contagion.

Living Rooms Back of Stores.—The building ordinance of a large city should prevent the abominable and criminal practice of a family living in the rear of a store or shop of any kind. The partition between a store or shop and the living-rooms should be substantially built and air-tight, and no communication with the store or shop should be allowed through this partition. Scores of times the essayist has found children sick with scarlet fever, diphtheria or smallpox in the living-rooms in the rear of a store or shop, where a flimsy board partition half way up to the ceiling concealed the disease that was carried to the front room and conveyed to the patrons of the store, by the mother or father who acted as nurse to the sick and clerk for the store. It often occurs that the fear of injuring business prevents the shopkeeper from employing a physician, knowing that the doctor will report the case to the health department if he is called. The sale of milk should be prohibited from any store or shop that has any direct communication with living apartments.

Education of People Necessary.—We must have proper and efficient laws as a basis for controlling communicable diseases, but the greatest factor in keeping contagious and infectious diseases out of a city is the education of the people as to the danger of contagion, and how to destroy it and avoid communicating it to others. Every large city needs an intelligent, persistent and authoritative distribution of correct information upon the subject of infectious and contagious diseases. If this information is freely and persistently given out, the sum-total of the knowledge on this subject will be greatly enlarged, even among the most ignorant, and it will be a perpetual aid in saving children from sickness and death. The general practitioner will do good every time he informs a family that scarlatina and scarlet fever are different names for the same disease. Hundreds of people believe scarlatina to be a harmless, non-communicable disease. He will do good every time he teaches a family that varioloid is only another name for smallpox. There are many people who believe varioloid is not contagious, although all have a fairly clear idea that smallpox is contagious. He could give instances where smallpox has been transmitted to others because of ignorance of the true nature of the term varioloid. Life can be saved by correcting the erroneous impression, held by the laity, that measles in a child is comparatively harmless. The death-rate from this disease in children under 2 years of age is not less than 20 per cent. of those attacked. The same is true of whooping-cough. The profession should continue to instruct the people in correct methods of caring for those suffering from infectious disease and continue to preach cleanliness everywhere.

DR. WILLIAM A. EVANS followed with a paper on "Individual Prophylaxis," which will appear in THE JOURNAL.

Immunity as a Factor in the Prevention of Disease.

DR. ADOLPH GEHRMANN, who read this paper, briefly presented such facts as have value in an experimental or practical way toward proving the efficiency of certain methods in preventive medicine. Outside of the practical application of vaccination against smallpox, the entire development of preventive inoculation began with Pasteur's studies of chicken cholera, anthrax and hydrophobia. The aim of his research was essentially toward artificial immunization, while the German students evolved true curative methods. Although in some cases there may be doubt, still, apparently every infectious disease develops more or less resistance in the infected individual when he recovers. It would, therefore, appear that the strongest development of acquired immunity would be occasioned by an attack of the disease which is just short of killing the individual. Theoretically, preventive inoculations are most scientific, but they can only become practically permissible when the life of the susceptible one is beyond doubt assured. It is unreasonable to consider that acquired immunity has absolutely defined relations toward possible infection. It is always a matter of degree dependent on some recognized factors, as age of the individual, his general vitality and the severity of the immunizing experiment, as well as upon more remote factors, as chemical constitution of his tissues and the rapidity of metabolic changes. It is, therefore, almost impossible to say, in any individual case, what the results of preventive inoculation

will be as regards thorough protection and duration of the protective influence. A repetition of the experiment in times of exposure should have less danger attached than in the original inoculation. There is only one way in which to positively test immunity, and that is by an exposure to suitable virus. It can be stated that active immunity is only preventive and should never be attempted for curative purposes; while passive immunity is both preventive and curative, with its greatest value as a curative agent.

After summarizing the results of the workers in the various fields, Dr. Gehrmann stated that how far preventive inoculation can be carried in protecting an individual against a number of diseases must at present remain an open question. It would seem more rational to limit the immunization of patients against bacterial diseases to such times as they are in danger of exposure or have been exposed.

Diet and Exercise as Preventive Measures.

DR. N. S. DAVIS, JR., said that indiscretions in diet, and failure to take exercise, are among the most important causes of ill-health. While the illnesses that result from dietetic indiscretions and from lack of sufficient exercise are, for the most part, of minor importance, in that they do not create much mortality, and therefore do not appear in the death returns, yet they are of the greatest importance. They limit the amount of work individuals can do. The frequency with which maladies occur, due to indiscretions of diet, can not perhaps be more strongly stated than in the words of Sir Henry Thompson, who has said that more than one-half of the diseases which embitter the middle and latter part of life—among, at least, the middle and upper classes of the people—are due to avoidable errors in diet. If this is true, it is perfectly evident that fully one-half of the maladies in middle and later life are affections which can be prevented under careful supervision of physicians, and which should be carefully studied from the standpoint of prevention. It is hardly necessary to more than mention the fact that errors in diet and dietetic management are among the most common causes of ill-health in infancy and in the early years of childhood. Physicians are familiar with the illnesses that arise from indiscretions in diet, and those that lead perhaps to fatal results, and therefore the mortality statistics have been vastly improved by the introduction of measures in large communities for the prevention of many of the illnesses that arise from improper feeding in infancy and childhood.

In order to prevent the dissemination of food which might propagate disease, the universal public inspection of food would help very greatly. Almost all of the parasites that are conveyed by food can be destroyed by heat—by cooking. Therefore, proper cooking is of the utmost importance as a means of preventing the dissemination of illnesses in this way.

Dr. Davis discussed at considerable length the questions of too much exercise and not enough exercise. Finally, he emphasized the importance of food and of exercise as factors in the production of disease, and, when rightly regulated, serving as factors in the promotion of health.

DR. DANIEL R. BROWER followed with a paper on "Prevention of Insanity," which will be published in THE JOURNAL.

NEW YORK ACADEMY OF MEDICINE.

Meeting of the Section of Medicine, held February 19.

Dr. John H. Huddleston in the chair.

Pleurisy.

DR. JAMES J. WALSH presented a brief paper, founded on the work of Widal, on "Cyto-diagnosis." This method consists in examining some of the centrifuged pleuritic exudate with the microscope. The earlier the stage at which the examination is made, the more numerous are the polynuclear cells. Mechanical pleurisy, he said, is characterized by the presence of patches of endothelial cells, while pneumococcus pleurisy is characterized by the presence of a few red blood-cells, a few scattered lymphocytes and many mononuclear cells.

DR. ALEXANDER LAMBERT discussed "The Bacteriology of Acute and Chronic Pleurisy." He said that 30 to 40 per cent. of all primary pleuritic effusions are known to result from tuberculosis. Syphilis is not a rare cause, and pneumococcus infection is common, the effusion often being purulent.

DR. C. E. NAMMACK treated "Early and Late Tapping in Pleurisy." He gave the following rules for guidance: 1, when life is directly threatened by asphyxia from compression or from cardiac weakness; 2, when the fluid has risen to the third interspace anteriorly, as such effusions rarely disappear spontaneously; 3, in all lesser effusions where spontaneous absorption is unduly delayed, resort to tapping. In a general way, the rule may be laid down that when an effusion has remained stationary for more than one week, a portion should be removed by aspiration, as this will often in itself be sufficient to cause the entire removal of the fluid.

DR. C. H. LEWIS read a paper on "The Use of Methylene Blue Injections in Pleurisy with Effusion." He said that he had been led to devise this method of treatment not only because he had learned that spontaneous absorption gave permanent results, but because it had occurred to him that if by the injection of some substance the formation of adhesions could be promoted, subsequent aspiration would effect a prompt cure. Methylene blue accomplishes this, and is an antiseptic, diuretic and anodyne. He withdraws a certain quantity of the serous effusion, mixes it in a graduate with 10 or 15 grains of methylene blue, and returns the mixture to the pleural cavity. In the 23 cases of serofibrinous pleurisy so treated, the average duration of treatment was fourteen days.

DR. JULIUS A. BECKER described "The Routine Treatment of Pleurisy at the Mount Sinai Hospital." He said that where pleurisy follows an attack of rheumatism, antirheumatic remedies are prescribed. The pain is relieved by the local use of blisters, the Paquelin cautery and strapping, and by the internal administration of morphin, codein or heroin. It is the custom to aspirate a case of serous pleurisy as soon as there is evidently much interference with the action of the lung. The records show that this practice has shortened the duration of the disease, and has reduced to a minimum the thickening of the pleura and the permanent crippling of the lung. The occurrence of pain, or coughing, or the withdrawal of a little blood-stained fluid should be taken as an indication that no more fluid should be aspirated. In no case has there been a severe hemorrhage, or has empyema been traced to infection at aspiration. When there is a large purulent effusion, it is better to remove some of the pus by aspiration before operating, as by this means the danger of shock from the sudden withdrawal of a large quantity of fluid is diminished.

DR. M. MANGES expressed some doubt as to the practical outcome of Widal's labors. The judicious removal of a portion of the effusion holds out the best chance of recovery, though it should be borne in mind that it is quite possible that the presence of a small quantity of fluid in a case of tuberculous pleurisy may be beneficial. He has seen one death result from simple aspiration.

DR. H. LILIENTHAL suggested that in performing thoracentesis the danger of skin infection should be avoided by nicking the skin with a knife before introducing the aspirating needle. For cases of empyema he advocates a large opening as preferable to the use of a drainage-tube, and cautions those who prefer to use the tube to be sure that it is no longer than is absolutely necessary. After the operation, it is advisable to make use of Koenig's method of postural drainage.

DR. S. S. BURT said that while he has been much interested in the methylene blue treatment, he has been backward about giving it a trial because of some experiments published about five years ago, and which seemed to prove that this substance causes acute parenchymatous degeneration of the kidneys and liver and acute catarrh of the bladder.

DR. ANDREW H. SMITH also emphasized the importance of using a very short drainage-tube in the chest. He advises his patients, on recovering from pleurisy, to make frequent efforts to aid the expansion of the lung by simply closing the nostril and making a gentle expiratory effort.

DR. HENRY P. LOOMIS said that he had long ago come to look upon the occurrence of pleurisy with effusion in a case of pul-

monary tuberculosis as a conservative effort of Nature, and is accordingly slow to interfere with it under these circumstances. He believes that it acts beneficially by splinting the lung and securing rest for this organ.

DR. EGBERT H. LEFEVRE said that his own studies in cytodiagnosis, following after Widal, ended in discouragement. Long before there is any outpouring of fluid in serous pleurisy there is a restriction of the movements of the affected side. He has a very high opinion of the value of the salicylate of sodium as a remedy for promoting the absorption of the fluid. In his hands, the best local application has been inunction with blue ointment.

DR. WILLIAM H. THOMSON called attention to the need for caution in gymnastic exercises, particularly those requiring motion of the arms over the head, after pleurisy. He always instructs his patients on this point, because he has known hemorrhage to occur even several years after an attack of pleurisy, simply as a result of such exercise causing rupture of adhesions. It is well to have the chest strapped for six months after a pleurisy.

DR. LEWIS, replying to Dr. Burt concerning the possible deleterious action of methylene blue, said that in his cases the urine has been carefully examined daily during the treatment, and there has not been the slightest evidence of any harmful effect on the kidneys.

SAN FRANCISCO COUNTY MEDICAL SOCIETY.

Meeting held in San Francisco, February 12.

President Dr. George H. Evans, in the chair.

Bacteriologic Diagnosis of Diphtheria.

DR. W. H. KELLOGG read a paper on this subject. He said that the fact that the Klebs-Loeffler bacillus is the cause of diphtheria, is demonstrated by: 1, its constant presence; 2, its isolation in pure culture; 3, the reproduction of the disease in animals by inoculation with pure culture; and 4, the finding of identical lesions and distribution of organisms in the experimental as in the original disease. The nature of the pseudomembrane was described, and the author gave a thoughtful description of the morphology and cultural characteristics of the bacillus. He detailed the technic of conducting the bacteriologic examination. Several slides should be prepared from each culture-tube, one from each kind of colony that appears; or, if an even layer is present, material should be taken from different parts of the tube. It frequently happens that the bacteriologist fails to find the organism in cases that are true diphtheria, and this may be due to the fact that an antiseptic spray has been used not long before taking the swab, or the swab may have been faultily infected. Another source of error lies in the fact that in cases of mixed infection with staphylococci, the surface of the culture-tube may be thickly studded with colonies of the latter, between which are minute colonies of the diphtheria bacilli, their growth inhibited by the preponderating growth of staphylococci. One negative examination should not, therefore, be taken as conclusive, especially if the clinical aspect of the case does not coincide; but repeated examinations are positive in their results. He referred to the persistence of the bacilli in the throat after the disappearance of the false membrane, and urged the necessity of making later examinations at least once a week in order to determine when to raise the quarantine.

Specific Treatment of Diphtheria.

DR. GEORGE H. EVANS read a paper calling attention to the unreliability of statistics when compiled from limited sources of information, but such statistical reports as those furnished to the American Pediatric Society at Montreal in 1896, are to be regarded. Antitoxin was distributed to the physicians of San Francisco by the board of health of that city, for use among the destitute poor, from November, 1897, to April, 1900, and from the clinical reports furnished by the attending physicians of the fatal cases, the author drew some illustration of the value of the serum given early and in large doses. The mortality of the patients thus treated was only 13 per cent., but he believes that this mortality could have been materially reduced had use of the antitoxin been carried out more fearlessly. Thus, of the fatal cases, a very small minority of them received the serum before the fourth day. Such delay is sometimes unavoidable among the poor, where medical aid is not as a rule called early, but large doses should be used, and of these fatal cases, in only six was as large a dose as 4000 units used; 4000 units can be used as the initial dose in a mild case with absolute impunity, and smaller doses than 2000 units should not be used for any purpose other than immunization. In nasal and laryngeal cases, and cases of mixed infection, 3000 or 4000 units should be considered the minimum initial dose. The large doses given by McCollom, of Boston, were referred to, and the reduction in mortality in the apparently moribund cases since its administration in this way was begun. Disagreeable effects following its use were passed over as comparatively unimportant. The increase in the number of cases of paralysis since its introduction was attributed to the fact that more patients survive, and either recover, or live sufficiently long to become paralyzed. That the paralysis is due to the toxins absorbed and not to the antitoxin, has been quite clearly demonstrated, both clinically and experimentally. Ransom's work in Behring's laboratory was particularly referred to. Thirty-four per cent. of the fatal cases in the San Francisco series had paralysis. Almost all of them were treated late in the disease, and small doses were used in every case, 4000 units being the largest. The indications for the use of antitoxin must depend on the clinical diagnosis. To await the bacteriologic confirmation of the diagnosis is a sacrifice of life in many instances, and particularly is this so in some of the laryngeal forms where no membrane is visible, and where repeated efforts fail to produce any growth on culture-media. Antitoxin and an appropriate syringe should be part of every physician's armamentarium, and in the presence of any suspicious exudate, the serum should be used and then a culture made.

Treatment of Diphtheria.

DR. W. B. LEWITT, in a paper on the "General and Local Treatment of Diphtheria," said that while he is an ardent advocate of the early and vigorous use of antitoxin, he has not yet arrived at that frame of mind that would lead him to depend in all, or even in a majority of cases, on the good effects of that agent alone. In regard to the general treatment of the disease, the object to have in view above all others is to maintain the strength of the patient by rest and the administration of food and stimulants. He urged the necessity of keeping the blood well charged with the products of digestion, as a means of inhibiting to a great extent the formation of toxins; and, therefore, food should be given every two or three hours, and in quantities as great as can be assimilated. He considers milk the best article of diet, and in children under 5 years of age, it should be the only one. In cases where there is a refusal to take food, he urges forced feeding, having no confidence in rectal alimentation, as the enemas in children are seldom retained, and it is a question how much is absorbed. Stimulants are called for in the majority of cases, and should be commenced early. Regarding the internal administration of iron, he only uses it during convalescence. Referring to local treatment, he recalled the days when tincture of iron, carbolic acid, nitrate of silver, and such drugs were used so commonly in the throats of these patients, and drew a vivid picture of the piteous results of such treatment. Where the membrane is confined to the tonsils, local treatment is not necessary. Where the area is greater, all that can be accomplished by any drug used locally can be done by warm sterile water. He advocates using a stream of warm water through the nasal cavities with an ordinary syringe, thereby washing out the nares, nasopharynx, and pharynx. There is generally much less difficulty in doing this than in making the ordinary application to the throat, and it has the very great advantage that the patient does not have to be raised from the recumbent position. In considering laryngeal cases he referred to the good results obtained at the Children's Hospital by the use of creosote in vapor, and the sublimation of calomel. By this method he thinks the necessity of intubation or tracheotomy is frequently done away

with, and life prolonged until the good effects of the antitoxin become manifest.

Sequels of Diphtheria.

DR. WM. FITCH CHENEY read a paper on this subject. He drew a distinction between the diseases occurring coincident with diphtheria, which are more properly called complications, and the true sequels which are the diseases that come after it, as a consequence of it. These are: 1, disease of the blood; 2, disease of the heart; and 3, disease of peripheral nerves. Disease of the blood commonly follows diphtheria in the form of a severe grade of anemia, and calls for the usual remedies employed for secondary anemia. Disease of the heart is either the result of a myocarditis occurring as a complication, or is due to changes in the nerves supplying the heart muscle. The heart muscle almost invariably suffers from parenchymatous or fatty degeneration, to a greater or less extent, and under the influence of the diphtheritic toxins circulating in the blood, and the condition of the pulse should be carefully watched even after convalescence is well established. The treatment of this condition consists first of all in rest. Rest in bed should be insisted on for at least one week, and better for two weeks, after the temperature has become normal and the throat is free from membrane. If the pulse, in spite of this rest, develops any variations from the normal, whisky must be used freely and strychnin given regularly in full doses.

Disease of peripheral nerves is the most common sequel of diphtheria, and is a neuritis, caused by the absorption of toxins manufactured by the bacillus in the throat. Autopsies on human beings and experimental evidence prove this. The paralysis resulting from this neuritis is usually not serious, except where it involves the muscles of respiration, and the heart muscle. It is always difficult to say how much of so-called "heart failure" after diphtheria is due to changes in the myocardium and how much to changes in the nerves supplying the heart muscle. Sudden death may occur from either; the premonitory changes in the pulse are practically the same in each; and fortunately the same treatment that is indicated for one is equally indicated for the other. The author thinks there is no relation between the severity of the diphtheria and the occurrence of the paralysis. He considered the question as to whether treatment of the primary disease with antitoxin has power to prevent the occurrence of paralysis as doubtful, but comparing the report presented to the American Pediatric Association in 1896, with other statistics on the incidence of paralytic sequels, the difference is slightly in favor of the antitoxin treatment.

Referring to the treatment of the paralyses involving the palate, the eyes, and limbs, recovery ultimately takes place regardless of interference, but probably more promptly, by the use of strychnin and iron tonics internally, and the application of electricity externally; however, the most valuable element of all in the treatment is time. On the other hand, the forms involving the action of the heart and lungs too often end fatally in spite of every therapeutic effort. The measures to be employed in the treatment of respiratory paralysis are absolute rest, strychnin hypodermically in full doses, and electricity applied to the respiratory muscles by the Faradic current. For threatened cardiac paralysis the treatment is again complete rest, strychnin hypodermically, and alcoholic stimulants by the mouth or under the skin.

Syphilitic Reinfection Simulated.

DR. A. B. GROSSE reported a case simulating syphilitic reinfection—a banker, aged 37, who eleven years ago had a primary lesion, followed in seven weeks by secondary symptoms. He was subjected to an antisyphilitic treatment for three years, after which he was given permission to marry. He has two children, aged 7 and 2½ years respectively, both of whom were born at term and are healthy at present. His wife is healthy and has had no miscarriages.

After a suspicious coitus on Oct. 30, 1900, he was seen by the doctor on November 24, who found an ulceration to the left of the frenum, which looked like confluent ulcerated herpes. The sore was not indurated. One gland in the left groin was enlarged, and others of the groin were palpable; the epitrochlear and axillary glands were also palpable, and there was enlargement of several cervical glands. On November 28 he was very much improved, and on December 7 was absolutely well, with no sign of a scar. On Jan. 8, 1901, having taken a dose of antipyrin for headache the day before, a roseola of the trunk and limbs appeared—no itching attending it—and an adenopathy as before. On January 11 small papules were found in the center of several of the roseolar spots, which were slightly squamous. On January 16 the rash had entirely faded.

On January 22 a similar rash came on immediately after taking 20 grains of antipyrin, but had entirely disappeared by February 2, and on February 13 he had another outbreak after taking the same drug.

The case showed the necessity of carefully observing a patient before making a diagnosis of reinfection. While the eruption differed from any antipyrin rash he had previously seen described, the doctor thinks we must consider antipyrin as the only etiologic factor, as the rash was produced three successive times after the ingestion of the drug.

PHYSICIANS' CLUB OF CHICAGO.

Meeting held February 25.

Dr. William E. Quine in the chair.

The Ravages of the Venereal Diseases.

DR. J. CLARENCE WEBSTER discussed "Their Extent: Can they be lessened?" He stated that their extent and ravages might be considered from many points of view. Unfortunately, a great deal of accurate information regarding any of the venereal diseases is not obtainable as applied to many centuries. Although much is known about syphilis at the present time, there is considerable discussion as to how late it appeared among the Caucasians. There is one school that holds that syphilis was only known in Europe after Columbus discovered America, and it is said that his sailors imported the disease from the West Indies to Europe. Another school believes that syphilis was known in China and Japan many centuries before the discovery of America.

With regard to the gonococcus, the speaker quoted a passage from Leviticus, supposed to have been written by Moses, which is taken generally to refer to gonorrhea. In 1872 Noeggerath published a paper in which he drew attention to gonorrhea and placed it in a new light, and it is owing to Noeggerath's work that the profession holds its present views regarding the importance of this disease in the community. This author stated that of every 1000 men in New York City, 800 have this disease; that of every 100 men who have gonorrhea, 90 per cent. are never cured. He also holds that 3 out of every 5 married women in New York suffer from the effects of this disease. There is no more important factor in producing disease, misery and distress in women than gonorrhea. He is perfectly certain that the rank and file of practitioners look on gonorrhea in women as did our forefathers, and that our present knowledge of the gonococcus and its ravages has not permeated the ranks of the profession. If the rank and file of the profession do not understand these things, it is not to be wondered at that the laity do not. Noeggerath's views are not very well known by the laity. A chronic gonorrhea may be apparently cured, but there may remain a condition which might not be called chronic, but rather latent. Latent gonorrhea in the male is not very well understood. It has been quite clearly shown that in females the gonococcus acts only on the urethral mucosa primarily and on the mucosa in the cervix. It does not attack the vagina nor the vulva, because it can not penetrate the stratified epithelium like the vagina or vulva. However, in certain cases it may do so. In young children a typical gonorrheal vaginitis or vulvitis may be observed. In old women, with thin epithelium, typical vaginitis may be noticed, and particularly in connection with women in labor. In pregnancy and labor a large percentage of women are attacked as a result of the softening, the thinning, the bruising of the tissues, so that the gonococcus plays an important rôle at this time. Latent gonorrhea in the female, as in the male, has a tendency to change into an acute virulent condition at these

times. There is no doubt but a man may cohabit with a woman for a long time and never give her any trouble; the gonorrheal virus may never reach the uterus, and the small amount of discharge which comes from the male penis may never affect the urethra or other parts of the woman, but let her become pregnant and the risk is enormously greater. Let her be at the end of pregnancy, and the risk is still greater. If the public were educated to put themselves under the care of the very best physicians and demand the most careful, conscientious and constant treatment for weeks and weeks, the effects of gonorrhea would be enormously reduced, particularly as applied to males. The same thing holds with regard to women. The ordinary routine treatment of women who have gonorrhea by the vaginal douche is of very little avail. The physician should get at the seat of the disease at once, namely, the urethra, the orifices of the ducts of the Bartholinian glands, and the mucosa of the uterus. Not one physician in a hundred treats acute gonorrheal cases in that way. He trusts to luck, and prescribes an ordinary diet and rest. He believes the ordinary treatment of gonorrhea in the female is responsible for the enormous amount of inflammatory mischief which is so commonly found.

DR. HAROLD N. MOYER discussed the subject of "Circumcision in Restricting the Spread of Syphilis." His paper will appear in THE JOURNAL.

DR. EDMUND ANDREWS spoke of the "Diminution of Venereal Diseases by Educating the Public." He said that the periodical press, consisting of the newspapers and the magazines, can, if it will, do a great educational work. There is, however, an obstacle of large dimensions before them. The American people are the most squeamish of all nations as to any public allusion to sexual matters. Any warning and information on the subject of venereal diseases would drive away subscribers and wreck the finances of any periodical venturing on it, unless the ideas were expressed with almost superhuman caution and delicacy. Therefore, at present, the profession can not command efficient help from the press. Yet he thinks the public's squeamishness is slowly abating. If the profession does its duty, the time will come when the periodicals will give some assistance.

Each physician acting in his own individual capacity can do much to educate the public. There are over one hundred thousand medical men in the United States. Each of them on the average has a patronage of about seven hundred persons, and he stands before them as a trained and trusted expert, whose opinion in such matters is valued above every other in the community. Physicians are not hampered like the stockholders of periodicals. They have a thousand opportunities to educate their patrons and others about sexual vices and venereal diseases. Already the public owe to their family physicians nearly all they know on this subject, and if physicians do their duty they can educate the public still more.

Recently, Dr. Frederic Bierhoff, of the Berlin General Policlinic, made a study of the sources of 381 cases of gonorrhea in males, with the following result: The persons from whom the disease was contracted were as follows: open prostitutes, 12; clandestine prostitutes, 44; kept mistresses and actresses, 138; working women and servant girls, 167, and married women, 20. The chief of police in Berlin informed the speaker that there are grave reasons why it is impossible to completely enforce the law. He judged that he could only keep about one-fourth of the actual prostitutes under his control. He added that for important reasons he could not undertake the regulation of kept mistresses, nor of several other classes of loose women; also, it is to be remembered that a registered woman between examinations may carry infection from one male patron to another without having the disease herself.

In educating the public the medical profession can sometimes work through other professions. For instance, if physicians go at it in the right way they can do a great deal of good through the clergy. The two professions have to some extent weakened their forces by pulling against each other instead of working heartily together in an alliance to promote morality and good sanitation. Both sides have been at fault. The clergy are very highly educated and honestly devoted to the intellectual and moral advancement of the nation. Being almost as numerous as physicians, they have a powerful influence in every community, so that in planning for the sanitary education of the public, it is important to secure their co-operation. Morality and sanitary science are natural allies and ought to march forward hand in hand. Meanwhile, the clergy, like the press, are a little hampered in public expression by the squeamishness of modern society; yet they contrive to preach sermons without offense on the seventh commandment and to denounce both sexual and all other immorality. If they possessed a little more education on venereal diseases, they could with their constant opportunities for confidential advice do much to make their knowledge of disease a powerful weapon against vice, and thus promote both morality and health. A few sanitary lectures added to the curriculum in theological seminaries would furnish every graduate with the necessary facts.

Another power is the great army of teachers. Even outside of the classrooms, they become by their daily contact with others very influential and well-trusted advisers. In the normal schools and other institutions where they prepare for work, they should have a brief course on the prophylaxis of all infectious diseases. In conclusion, Dr. Andrews confessed that a complete education of the adult public is impossible, but he believes that by slow degrees the profession can diffuse light enough into the darkness to be a valuable guide to those who now wander in the mists of ignorance.

PROF. CHARLES R. HENDERSON, of the University of Chicago, discussed the moral aspects of the subject. He said that every man is a moral leader, and those who possess special knowledge of the venereal diseases are particularly responsible, in his opinion, for the kind of teaching they give, making allowance for human frailties and weaknesses. One of the curses of the present day is the free distribution of quack literature among young people. The distributors of such literature should be flogged.

DR. JOSEPH ZEISLER spoke of the establishment of special hospitals for the treatment of venereal diseases, saying it is to be regretted that there is not a hospital in Chicago for taking care of such cases. Chicago is considerably larger than Vienna, yet Vienna has a hospital in which there are 600 beds for the management and treatment of these diseases. In Paris there are hundreds of beds in hospitals, for the same purpose. The principal reason why we have no hospitals in this community for the treatment of venereal diseases is because our public-spirited citizens have not the courage of their convictions. There is not a single intelligent man among the millionaires of Chicago who does not know that there is need for such a hospital. The educational value of such institutions, aside from the treatment and care of such patients, would be immense to physicians. Students would have the advantage of seeing a large amount of material, and of receiving instruction in regard to the venereal diseases by eminent men. Were such hospitals established in this and other cities, it would not be long before an avalanche of scientific knowledge would come forth which would be of incalculable benefit to the medical profession.

JUDGE LORIN C. COLLINS spoke of the "Control of the Venereal Diseases by Legislative Enactment." He did not think any large number of the physicians present would agree on what would be proper legislative enactment for the purpose of controlling and diminishing venereal diseases in the community. If physicians should substantially agree among themselves, they would run up against a very powerful body, the public, who probably would not agree with physicians. The same is true of legislators. He was a member of the legislature in 1879, when St. Louis licensed the social evil by an ordinance passed by the city council, and he believes there was passed in the legislature an emergency clause bill prohibiting the licensing of prostitution by any city in Illinois. He thinks that if a hospital were established for the cure of venereal diseases, it would meet with very strong and determined opposition, the opposition contending that in establishing hospitals for the cure of venereal diseases it would be encouraging im-

morality and vice. This opposition would come from the best classes in the community, from the members of churches. The constitution of this state says that the right of trial by jury, as heretofore enjoyed, shall remain inviolate, and that no man shall be deprived of his life, liberty or property except by due process of law. A case was cited by the speaker. If a man, in the most virulent and dangerous stage of smallpox, should walk down Clark Street, there is no power in Illinois by which that man can be taken and carried forcibly to a place where he can be isolated. No law will authorize this. Many years ago he examined the public health laws of England, and stated that their method of treating venereal diseases is more by persuasion than by force. A person afflicted with a venereal or contagious disease is persuaded to enter a hospital for treatment, and the British law contains no provision whereby a person suffering from smallpox, for instance, can be taken by force to a hospital for treatment. A person may be fined for spreading contagion; he may be imprisoned if the fine is not paid, but he considers this of no value whatever. The person must be taken at the right time by a summary process. He said that we are more particular in this state in all matters affecting the liberty of the citizen than any state in the Union, and this has been the tendency of the Illinois Supreme Court, therefore, anything physicians might do toward securing legislative enactment for the control of venereal diseases would have to be done very carefully and conservatively. Chicago could not pass an ordinance that would be efficacious. Power has not been granted the city as yet by the state, and it would be necessary to have legislation on this subject by the general assembly. He feels that something should be done toward legislative enactment for the control of venereal diseases, and he believes a move on the legislature of the state, with such a body as the medical profession back of it, would be a great educational force which would lead to the dissemination of information on these subjects and would eventually bring about some good. But any measures for the control of the venereal diseases would have to be handled in a conservative manner, and they would have to be very judicious to meet with the approval of the solons at Springfield.

DR. L. BLAKE BALDWIN said that one public-spirited citizen had already spent more than $3000 toward a hospital for the treatment of venereal diseases, and that this hospital was established last June, since which time the speaker has filled over 1600 prescriptions for gonorrhea and syphilis. He has at present in the institution forty patients suffering from either gonorrheā or syphilis, or both.

DR. JOHN M. DODSON firmly believes that the time has come when the medical profession should take more active measures to extend the knowledge which it has acquired in recent years in regard to the prevention of diseases, and of public hygiene in a general way. He suggested that the profession, through its organized societies and medical colleges, especially those connected with institutions of general learning, should institute extension courses, so that a series of lectures, carefully prepared and illustrated properly, may be given to the various members of social clubs and other organizations. He believes, through the medium of such organizations and institutions, that lectures on sexual physiology and anatomy, also on the venereal diseases, their dreadful consequences and proper mode of prevention, would do a great deal of good in this city, if wisely conducted.

DR. DENSLOW LEWIS expressed satisfaction that this symposium had been held. He referred to instances where mawkish sentimentality had prevented a free discussion of these important matters even in professional circles. He condemned illiberal criticism of honest efforts to benefit humanity by calling attention to the truth. He favored a thorough investigation of all matters pertaining to sex relationship and venereal diseases, and a diffusion of knowledge of these subjects. He urged the consistent study of infection as occurs when other infectious diseases are considered. The education of the child in sexual matters is of great importance, and can scarcely begin too early. Young boys should appreciate the dignity of virility. They should understand that when they grow up to be men, under suitable restrictions of civilization, religion and education, they may hope to be privileged to indulge the sexual function as their fathers have done before them for the perpetuation of the species. They should be taught that nothing in their youth should debase them or interfere with the performance of this function at the proper time under suitable conditions. They should be taught also that young women are under their protection; that under proper restrictions these young women will become mothers, and for that reason nothing should be done to them which will debase them or interfere with the proper performance of their functions. They should be taught regarding the venereal diseases in detail; they should know that gonorrhea is not a simple disease, as ordinarily understood, and that syphilis may last for years, affecting the nervous system when all outward manifestations of the disease have disappeared. These matters are of the greatest importance in diminishing the ravages of the venereal diseases. They can only become known by proper instruction by competent medical men. Furthermore, among married people these matters should receive attention. He believes that in many instances venereal diseases are contracted because the sexual relations between husband and wife are unsatisfactory. He thinks it is the duty of physicians to instruct the men and women of their clientele regarding the details of the sexual act. He believes it to be the part of wisdom for physicians to speak out frankly and honestly to patients in that regard, for, oftentimes, even the integrity of the home is threatened when the sexual relations between husband and wife are not mutually agreeable.

The subject was further discussed by Drs. Charles S. Bacon, Hugh T. Patrick and L. Harrison Mettler.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Seasickness.

MEMPHIS, TENN., Feb. 27, 1901.

To the Editor:—Will you give a short statement of the causes, symptoms and best mode of treatment of seasickness? In causes, I mean the pathology, if any is known. And kindly refer me to some text-book where I can find something about seasickness. SUBSCRIBER.

ANS.—The pathology undoubtedly lies in the disturbances of the cerebral circulation, producing anemia of that organ. The symptoms are nausea and vomiting of the severest type, accompanied by great mental depression.

Dr. Daniel R. Brower recommends for such patients the following outline of treatment: Avoid excessive fatigue and mental worry for several days previous to sailing; proper attention must be given the gastro-intestinal tract by taking a light diet and producing free catharsis by means of a full dose of massa hydrargyri, followed at the proper time by a saline purgative. This treatment should be carried out two or three days before going on board ship. As soon as there has been a thorough evacuation one teaspoonful of the following should be taken three times a day until time to go aboard:

℞. Potassii bromidi ..... ʒv 20
Aq. menthæ piperitæ q. s. ad ..... ℥ii 64
M. Sig.: One teaspoonful in water three times a day.

As soon as the patient arrives on board ship he should take a dose of chloralamid (gr. x-xv, 0.66-1), lie down and remain in a horizontal position until at sea and when the effects of the medicine have worn off, he should move around on deck to ascertain whether he has obtained his "sea legs," to use the nautical expression. If he finds that he is still inclined to be seasick the dose of chloralamid should be repeated, followed by a light diet consisting of easily-digested food, which should be taken at frequent intervals, even though not inclined to eat. He should remain on deck as much as possible.

Dr. H. Rawlins states that seasickness can be relieved by elevating all the limbs. The object in doing this is to augment the blood-pressure, and thus diminish the anemia of the nerve centers due to the enfeeblement of cardiac action when in the nauseated state.

T. Lauder Brunton recommends wearing a tight bandage around the waist extending from the ensiform cartilage to the umbilicus or lower. Rockwell states that large doses of the bromids must be taken, beginning three days before the voyage. As much as thirty grains three times a day may be sufficient, but in some cases still larger doses are necessary. He prefers the sodium to the potassium salt. The late Dr. Beard, of New York, has written an interesting article on this subject, which has been published in book form.

Treatment of Smokers' Gingivitis.

R.	Salol	gr. xv	1
	Tinct. catechu	ʒi	4
	Spts. menthæ pip.	ʒiv	128

M. Sig.: One teaspoonful in half a glass of water as a mouth wash. —*Indian Med. Jour.*

Treatment of Furuncles.

R.	Ichthyol		
	Etheris sulph.		
	Alcoholis—50 per cent—āā	ʒiv	16

M. Sig.: Apply locally after shaving the part, and repeat in order to form layers of ichthyol over the part.

Treatment of La Grippe.

Dr. W. H. Thomson, in *Med. News*, states that for the relief of the general aching and pains in the bones aconite is the best drug. This modifies the state of congestion in the capillaries and quiets the heart. Next to aconite Dover's powder gives most relief. He recommends the following combination:

R.	Ext. aconite—solid	gr. i-vi	06-36
	Pulv. ipecac. et opii	gr. i	06
	Phenacetini	gr. viii	5
	Quininæ sulphatis	gr. vi	36

M. Ft. pilulæ No. ii. Sig.: Take six such pills the first day and each succeeding day until the fever subsides; then three a day until the catarrhal symptoms have disappeared.

We wish to call the practitioner's attention to the very large dose of aconite in the above pill, ranging as it does from grain one-half to three grains in each pill. The usual dose is from gr. ¼ to ½.

Nasal Obstruction in the Newborn.

Chauveau, in *Gaz. Hebd. de Méd. et de Chir.*, states that eczematous impetigo may, by its secretions, occlude the nares of a newborn infant. An acute coryza may be responsible for the obstruction. For the latter condition he advises three or four drops of the following solution to be introduced into the nose three or four times daily:

R.	Resorcin	gr. xv	1
	Ol. vaselini	ʒiss	48

M. Sig.: Introduce three or four drops into the nares three or four times daily; or

R.	Sodii biboratis	3iss	6
	Glycerini	ʒi	32

M. Sig.: Drop two or three drops into the nares three times a day.

Vomiting of Pregnancy.

Baer recommends the following combination in vomiting of pregnancy:

R.	Bismuthi subnitratis	ʒii	8
	Pepsini sacchari	ʒi	4
	Sodii bicarb.	ʒss	2
	Sacch. lactis	ʒi	4

M. ft. chart. No. xii. Sig.: One powder every three hours.

In addition he advises the following:

R.	Acidi nitro-hydrochlor dil.	ʒiss	6
	Spts. limonis	ʒi	4
	Syr. simplicis	ʒii	64

M. Sig.: One teaspoonful in a wine glass of ice water three times a day.

Removal of Cerumen from the Ear.

Dr. Godart, as published in the *Phil. Med. Jour.*, recommends the following to remove wax from the ear:

R.	Sodii carb.—pure	gr. xv	1
	Glycerini		
	Aq. destil. āā	ʒv	20

M. Insert a few drops into the ear several times a day, followed by irrigation with water at proper temperature.

Infection of the Breast During Lactation.

C. S. Bacon, in *N. Y. Med. Jour.*, states that when the nipple wounds become infected, but before there are any symptoms of general infection or involvement of the deeper breast, the local wounds may be treated by the application of cotton saturated with alcohol. Nursing through a shield may be allowed.

When the symptoms of deeper infection appear, nursing from the affected breast should not be allowed and the breast should be supported and put at rest by a bandage. By following this plan of treatment 80 to 90 per cent. of all breast infections will terminate without abscess. If in spite of this treatment some temperature continues or reappears, the presence of pus must be expected and the breast opened.

To Relieve the Itching of Urticaria.

R.	Alcoholis		
	Spts. etheris		
	Spts chloroformi. āā	ʒviiss	30
	Menthol	gr. ii	12

M. Sig.: Use as a local application.

Iodin in Liver Spots.

Dr. M. Porasz, as noted in *Merck's Archives*, states that the best means of removing pityriasis versicolor, or liver spots, is tinctura iodi. In from three to four days after painting the spots with this preparation the skin begins to desquamate, which process is completed in four or five days. The separated epidermis takes along with it the spores and mycelia of the parasitic fungus.

Treatment of Seborrhea with Benzene.

Leftwich, in *Brit. Med. Journal*, states that the treatment of seborrhea sicca with alkalies or with bland oils for the removal of the crusts has not been satisfactory. As the crusts are made up chiefly of fat, he states that benzene makes a good solvent by applying it with a shaving brush over the affected area; the thick crusts soon disappear. The benzene leaves the scalp very dry, and he advises the cleansing to be followed by an inunction. For this he prescribes:

R.	Ol. ricini		
	Spts. myrciæ, āā	ʒiss	48
	Tinct. cantharidis	ʒii	8
	Eau de Cologne	ʒiv	16

M. Sig.: Apply to the part every morning and repeat the benzene treatment once in five days.

The effect of the benzene on the baldness is also very satisfactory. To conceal the odor the author advises the addition of ten drops of oil of geranium to each ounce of benzene. In mild cases of seborrhea the benzene is mixed with equal parts of alcohol.

Treatment of Tonsillitis.

Dr. Cheveller, in *Klin. Ther. Woch.*, states that he treats all kinds of tonsillitis with the following gargle:

R.	Sodii salicylatis	ʒii	8
	Aq. menth. pip. q. s. ad.	ʒvi	192

M. Sig.: Use as a gargle several times a day.

Treatment of Acne of the Face.

In mild cases of acne, Dr. A. Phillopson recommends the following:

R.	Acidi acetici		
	Tinct. benzoin		
	Spts. camphoræ, āā	m. xlv	3
	Alcoholis, q. s. ad.	ʒiiiss	112

M. Sig.: Put on some cotton and rub the face night and morning.

Pertussis.

Dr. Roth has treated a great number of cases of whooping cough, with the following combination containing iodin and carbolic acid, with splendid results:

R.	Acidi carbol.	gr. xv	1
	Spts. vini gallici	ʒss	2
	Tinct. iodi	m. x	66
	Tinct. belladonnæ	ʒss	2
	Aq. menth. pip.	ʒiii	96
	Syrupi opii	ʒiiss	10

M. Sig.: A teaspoonful every two hours to a child over two years of age. —*Med. Summary.*

It will be seen, if Dr. Roth is quoted correctly, that the child would be taking one-half grain of carbolic acid every two hours, or twelve grains in twenty-four hours, which is a poisonous dose.

Treatment of Sore Nipples.

R.	Balsami peruviani		
	Tinct. arnicæ, āā	ʒss	2
	Ol. amygdal. dulcis		
	Aq. calcis āā	ʒss	16

M. Sig.: Shake well and apply to the nipple with a camel's hair brush. —*Med. Summary.*

Medicolegal.

Sufficiency of Basis for Non-expert Opinion of Sanity.—The Supreme Court of Iowa states, in the will case of Betts vs. Betts, that there is some authority for saying that it is not within the province of the court to pass upon the sufficiency of the information upon which a non-expert witness rests his opinion of a person's mental condition; that this is a matter for the jury. But, without indorsing this doctrine, it states that it has to say that no general rule can be laid down as to what opportunity for observation will be sufficient. Courts, it adds, should be slow to make any hard and fast rule, for all the facts out of which the opinion grows are given the jury.

Presumption of Accidental Death.—In the absence of evidence to that effect, the Supreme Court of California holds, in the case of Jenkin vs. the Pacific Mutual Life Insurance Company, that it will not be presumed that an insured person, who died from a gunshot wound, purposely took his own life, nor that he was murdered, but that his death must be attributed to accidental causes. That the courts will presume that the death was the result of an accident, when nothing more is shown than that it was brought about by a violent injury, and the character of such injury is consistent with the theory of accident, it declares, seems to be a rule upheld by the great weight of authority.

"Self-Destruction" Under Life Insurance Policy.—The United States Circuit Court of Appeals, Fifth Circuit, holds, in Union Mutual Life Insurance Company vs. Payne, that "self-destruction," as used in a contract of insurance stating that it, sane or insane, is a risk not assumed by the company, means suicide, and does not include accidental self-killing. In other words, accidental or unintentional self-killing does not forfeit a policy for suicide. Moreover, the court holds that a statement in the proof of death that the insured committed suicide is not conclusive of that fact against the person making it, and does not relieve of the burden of proof the company setting up suicide as a defense, although it is admissible as evidence of suicide, and, in the absence of explanation or contradiction, might be quite sufficient evidence thereof.

Presumption of Miscarriage from Accident.—The Appellate Court of Illinois, first district, holds, in Strehmann vs. the City of Chicago, that the fact of a miscarriage in two months after an accident, coupled with the evidence of the woman's physician that the accident, as described by her, might have caused the miscarriage, and no other cause having been proved, it would be a reasonable inference that the accident caused the miscarriage. Certainly, it says, it would be a question for the jury, on all the evidence, whether the accident was the efficient cause of the miscarriage. And it holds that it was calculated to mislead the jury for the trial court by an instruction to single out one fact in evidence, namely, the birth of the still-born child, not stating other facts in evidence, and inform the jury that such fact considered alone did not tend to prove that the accident was the proximate cause of it.

Can Not Dispose of Dead Body by Will.—The Supreme Court of California says, in the case of Enos vs. Snyder, that the general English and American authorities are not very satisfactory bearing on the contest where next of kin, on the one hand, and claimants under a will, on the other hand, demand possession of a body for the purpose of burying it. However, it considers it quite well established by those authorities that, in the absence of statutory provisions, there is no property in a dead body; that it is not part of the estate of the deceased person; and that a man can not by will dispose of that which after his death will be his corpse. Between next of kin and an executor or administrator as such, it holds that the custody of the corpse and the right of burial belong to the former, and says that it has been generally declared in the American cases, that the right of burial of a deceased wife or husband belongs to the surviving spouse, and in other cases to the next of kin, being present and having the ability to perform the service.

City Not Liable for Damages in Enforcing Quarantine.—The Supreme Court of Texas concurs, in what is now entitled the case of White vs. the City of San Antonio, with the Court of Civil Appeals of Texas, in holding that an action did not lie against the city for the wrongs complained of, as stated on page 1175 of THE JOURNAL of Nov. 3, 1900. This was an action brought to recover of the city for the acts of its mayor and health officer in taking possession of the plaintiff's hotel and placing and detaining therein certain persons suspected of having been exposed to the infection of yellow fever. The supreme court says that the enforcement of quarantine regulations and the establishment and maintenance of pest houses are matters of vital interest to the public in general, and are peculiarly a public function, and therefore, when devolved upon a city, are most generally held to belong to that class of duties for which a city is not answerable, when, through the negligence or misconduct of its officers in their performance, damages are inflicted. The rule, it adds, is recognized by the leading text writers, and is maintained by courts of the highest authority. Moreover, it considers that the provisions of the Texas statutes which make the health officers of a city officers of the state, show that their functions are governmental, and are conferred in the interest of the public at large, so that this rule clearly applies to their acts.

Injuries in Consequence of Effect of Intoxicants.—The Court of Appeals of Kentucky states one of the exceptions from the insurance contracted for in the case of Campbell vs. the Fidelity and Casualty Company of New York to have been of injuries, fatal or otherwise, received in consequence of having been under the influence of or affected by intoxicants. And it says that there seems to be a dearth of direct authority upon the question of what injuries may properly be said to have been received in consequence of having been under the influence of or affected by intoxicants. This clearly, it holds, does not include injuries such as disease resulting from the direct or indirect effect upon the system of the intoxicants. But it thinks that this language applies to injuries received in consequence of the effect of intoxicants upon the nerves, the mind, or the disposition of the insured. For example, it applies where a man's nerves are so unsteady from the use of intoxicants that he loses his balance upon the edge of a precipice, and falls; where his mind is so affected by their use that he does not see a present danger, but deliberately walks into it; or where his passions are so excited, and his temper so warped, that he recklessly does acts in themselves dangerous, or which naturally tend to produce dangerous results from others. Under this view, it follows that it is not necessary, in order to come within this exception of the policy, that the insured should be

so far under the influence of intoxicants as to be in what is ordinarily termed a state of intoxication or drunkenness, but only so far under the influence of or affected by them that incapacity, nervous or mental, or the excitement of passion, should be such that injury results in consequence of it.

Damages for Miscarriage from Assault.—The Supreme Court of Minnesota holds, in the case of Plonty vs. Murphy, that, on the trial of a civil action for the recovery of damages for an alleged assault on a woman pregnant with child, an alleged result being a miscarriage, it is not necessary, in order for the plaintiff to recover substantial damages for this particular injury, that she show by testimony that she suffered more pain, or increased illness, or greater impairment of health, than she would if the delivery of the child had been at the proper time and in the natural way. Here the defendant unjustifiably intruded himself upon the plaintiff by entering the kitchen in which she was at work, remained about ten minutes, talking in an excited and angry manner, shook his first at her when within striking distance, and raised his hand as if he would strike her. This conduct excited her fear, she did not sleep that night, had bearing-down pains next morning, commenced to flow within three days, and eight days afterward was delivered of a six-months' child, which, if living at the time of delivery, expired immediately afterward. The medical testimony adduced at the trial was to the effect that the affair, as related by the plaintiff, could not possibly cause a shock sufficient to produce a miscarriage. But the supreme court says that the jurors were not bound to accept this medical testimony as conclusive, it being wholly based on hypothetical questions, and open to the criticism which can properly be made as to all testimony of this nature. And it holds that not only was the evidence in the case sufficient to support a finding of the jury, in effect, that the defendant committed an assault on the plaintiff, but that, notwithstanding the expert testimony referred to, there was evidence from which the jury could find that the assault was the approximate cause of the miscarriage. It also holds that, in view of this fact, a verdict for $300 was not excessive.

What May Amount to Administering a Drug.—A section of the Indiana statutes provides that, whoever prescribes or administers to any pregnant woman, or to any woman he supposes to be pregnant, any drug, medicine, or substance whatever, with intent thereby to procure the miscarriage of such woman, shall, if the woman miscarries and dies in consequence thereof, be fined, etc. The word "administer" in said section, the Supreme Court of Indiana holds, in McCaughey vs. State, does not signify merely the manual administering of the drug, medicine, or substance, but it has a much wider meaning. Among the definitions of the word are the following: "To furnish; to give; to administer medicine; to direct or cause it to be taken." Webst. Dict. "To supply, furnish, or provide with." Stand. Dict. As used in said section, the word "administer," the court holds, was clearly intended to cover the whole ground named, making it an offense to give, furnish, supply, provide with, or cause to be given, furnished, supplied or provided with, or taken, any such drug, medicine, or substance, with the intent and either result named in said section. And the word, the court holds, embraces, and was intended to embrace, every mode of giving, furnishing, supplying, providing with, or causing to be taken any such drug, medicine, or substance. This it pronounces both the letter and spirit of the section. Moreover, as the section makes it a crime to either prescribe or administer such drug, medicine, or substance with the intent and result named therein, the court holds it immaterial in this case whether the woman knew of the properties of the drug and the purposes for which it was used, or whether she requested the accused to procure the drug for her, or he furnished it to her without such request, or whether she decided to take it before he procured and gave it to her. If he knew or supposed she was pregnant, and knew the purpose for which she desired the drug, and furnished it to her, and she afterwards, when he was not present, took the same, he administered the drug to her, the court holds, in the meaning of the section.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Philadelphia Medical Journal, March 2.

1 *Three Dangerous Operations. John B. Deaver.
2 On the Desirability of Combined Operations in Pelvic and Abdominal Surgery. W. P. Manton.
3 *Urinary Hyperacidity. Thomas R. Brown.
4 *Multiple Brain Abscess Following Empyema. Thomas A. Claytor.
5 *The Use of the Aqueous Extract of the Suprarenal Gland in Persistent Epistaxis. Lewis S. Somers.
6 *The Bio-chemical Basis of Pathology. Henry A. Bunker.
7 Cultivation of the Aspergillus in Urine. L. Napoleon Boston.
8 *A New Blood-stain. Randle C. Rosenberger.

Boston Medical and Surgical Journal, February 28.

9 *The Use and Abuse of Spectacles. Hasket Derby.
10 Avulsion of the Finger, With a Case in Which This Accident Occurred to an Infant Twenty Months Old. George H. Monks.
11 Two Cases of Ligature of the Internal Jugular Vein for Infective Thrombosis of the Sigmoid Sinus Due to Purulent Otitis Media; One Recovery and One Death. Frederick L. Jack.

Medical News (N. Y.), March 2.

12 *Veratrum Viride; Its Value in Some Conditions of Toxemia. A. B. Isham.
13 *The Treatment of Delirium Tremens by the Intravenous Infusion of Saline Solution. James P. Warbasse.
14 *Yohimbin and Its Salts; a New Aphrodisiac. Roberts Bartholow.
15 *Thymotal: A New Remedy for Ankylostomiasis. J. E. Pool.
16 Belladonna vs. Scopolia. Reynold Webb Wilcox.
17 Immunization for Typhoid Fever: A Review. H. W. McLaughlin.
18 Malarial Fever With Special Reference to the Value of Blood Examinations. Report of Cases. Herbert Old.
19 Is Rubeola Infection Antagonistic to Pertussis Infection? William Byrd Young.
20 Complete Transposition of the Viscera. George W. Webster.

New York Medical Journal, March 2.

21 *The Axis-Traction Forceps, With Special Reference to Rotary Axis Traction in the Treatment of Posterior Positions of the Anatomical Head. Simon Marx.
22 *Metrorrhagia Due to Inflammatory Processes Within the Pelvis. Edwin B. Cragin.
23 The Pathology of Intra-uterine Death. (Continued.) Neil MacPhatter.
24 *The Electrochemical Action of the X-rays in Tuberculosis. J. J. Rudis-Jicinsky.
25 *The Palliative Operative Treatment of Carcinoma of the Posterior Wall of the Stomach. Albert Vander Veer.
26 Hemorrhage from a Circumtonsillar Abscess. Walter F. Chappell.
27 The Non-Operative Treatment of Prostatic Hypertrophy, With Special Reference to Catheter Life. Ramon Guiteras.

Medical Record (N. Y.), March 2.

28 *The Treatment of Rheumatic and Allied Diseases of Joints Complicated by Deformity. Virgil P. Gibney.
29 *An Improved Method of Examining the Female Bladder, Admitting Intravesical Operations, and Treatment of the Ureters. William R. Pryor.
30 *Some Facts Regarding "Ureine." A. F. Chace and William J. Gies.
31 *A Method of Reducing Dislocations of the Thumb. John F. Erdmann.
32 *Tuberculosis in Prisons and Reformatories. S. A. Knopf.

Cincinnati Lancet-Clinic, March 2.

33 Appendicitis (Surgical Treatment). B. Merrill Ricketts.
34 Surgery of the Pericardium. Hal C. Wyman.
35 Looking Forward. Louis A. Molony.

St. Louis Medical Review, March 2.

36 A Plea for Early Operation in Ovaritis Followed by Epileptiform Attacks. W. Huston Ford.

Medical Age (Detroit, Mich.), February 25.

37 Complications and Sequelæ of Typhoid Fever. J. M. Krim.
38 Nasal Syphilis. M. C. Morris.
39 *Conservatism in Surgery. (Continued.) Maurice H. Richardson.
40 The Use of Cocain in Spinal Puncture. M. Shellenburg.

Pediatrics (N. Y.), February 15.

41 *Xeroderma Pigmentosum. Bernard Wolff.
42 1. Supraorbital Headache Due to Eye-strain. 2. Nasal Neurosis. Samuel G. Dabney.
43 Coxa Vara. Fielding L. Taylor.

The Post-Graduate (N. Y.), February.

44 Some Reflections Concerning Primary Sterility. Abram Brothers.
45 Successful Treatment of Some Acute and Chronic Joint Affections. William B. Snow.
46 Clinical Lecture. A. E. Davis.
47 The Treatment of Epilepsy—A Lecture. Joseph Collins.
48 Acute Purpura Hemorrhagica With Autopsy. F. W. Gavin.
49 Notes from the Clinics. Drs. De Garmo, Brown and Allen.

American Journal of Obstetrics (N. Y.), February.

50 *Cocainization of the Spinal Cord by Means of Lumbar Puncture During Labor. William R. Stone.
51 Fatal Case of Puerperal Fever Which Led to a Malpractice Suit. C. S. Bacon.
52 Cesarean Section on a Girl Thirteen Years Old. J. Clarence Webster.
53 Pregnancy and Delivery Complicated With Tumors and Neoplasms of the Genital Organs. Henry J. Kreutzmann.
54 *New Formation of the Female Urethra: With Report of a Case. Charles P. Noble.
55 A Device for the Relief of Bladder Spasm in the Treatment of Cystitis and Bladder Irritation. George H. Noble.
56 Dermoid and Other Cysts of the Ovary: Their Origin from the Wolffian Body. (To be continued.) Samuel W. Bandler.
57 Waters of Salsomaggiore and Their Therapeutic Action in the Diseases of Women. G. Emilio Curatulo.

Pennsylvania Medical Journal (Pittsburg), February.

58 Surgery of the Gall-Bladder. Otto C. Gaub.
59 Recent Advances in the Bacterial Treatment of Sewage. D. H. Bergey.
60 The Rôle of Insects in Transmission of Disease: a Résumé. Emma Osborn Cleaver.
61 Humanology or Higher Physiology. E. N. Ritter.
62 Sanitary Work for Children. B. H. Detwiler.
63 The Use and Abuse of the Forceps. W. Knowles Evans.
64 Nephritis Complicating Gynecologic Disease. George Erety Shoemaker.
65 Local Destruction and Regional Sterilization of Cancer by the Cataphoric Diffusion of the Electrolytic Salts of Mercury; a Further Report. G. Betton Massey.

Archives of Ophthalmology (New Rochelle, N. Y.), January.

66 *A Case of Recovery from an Affection of the Chiasm, With Remarks on the Location of the Optic Nerve Fibers in the Chiasm. Dr. Seggel.
67 Case of Interstitial Keratitis Cut Short by Attack of Measles. Herbert Harlan.
68 Two Cases of Steel in Eye: the First Removed by Magnet; Eye Saved, With Cataract Formation; the Second Remaining Quiet in the Background of a Healthy Eye. J. H. Delany.
69 Congenital Right-sided Anophthalmus With Left-sided Microphthalmus. L. D. Brose.
70 Ophthalmic Curiosities. 1. Proptosis by Gently Opening the Eye With the Fingers. 2. Healing of an Extensive Wound Through Cornea and Sclera. George Strawbridge.
71 Autopsy Report of a Case of Congenital Unilateral Anophthalmus. C. Zimmermann.
72 Two Cases of Ossification of Choroid. David Webster.
73 *On the Circulation and Diminution of Tension in Atrophic Eyes. G. Ischreyt.

Annals of Gynecology and Pediatry (Boston), February.

74 *A Consideration of the Different Operative Procedures in the Treatment of Retrodisplacements of the Uterus. O. Beverly Campbell.
75 *"Insanity in Women Associated With Pelvic Diseases." W. O. Henry.
76 Report of a Case of Acute Fatal Pemphigus. Jay F. Schamberg.
77 Fourteen Years' Work in Abdominal Surgery. F. F. Lawrence.
78 Gonorrhea in the Female. Alfred Roulet.
79 The Nature and Treatment of Neuralgic Dysmenorrhea. Eugene C. Underwood.
80 Hernia of the Bladder. Charles C. Allison.

Chicago Medical Recorder, February.

81 The Limitations of Clinical and Microscopical Evidence. W. K. Jaques.
82 Chronic Myocarditis and Fatty Degeneration of the Heart—Varieties and Etiology. Joseph M. Patton.
83 *The Pathology of Chronic Inflammations and Degenerations of the Myocardium. Arthur R. Edwards.
84 *Symptoms of Chronic Myocarditis and Fatty Degeneration of the Heart. William E. Quine.
85 Symptomatology of Angina Pectoris. Frank Billings.
86 Methods of Examination of the Heart. George W. Webster.
87 The Diagnosis of Myocarditis and Fatty Degeneration of the Heart. E. Fletcher Ingals.
88 Prognosis of Chronic Myocarditis and Fatty Heart. Robert B. Preble.
89 Treatment of Chronic Myocarditis. Robert H. Babcock.
90 The Symptomatology of Cardiac Neuroses. James B. Herrick.
91 The Diagnosis and Prognosis of Cardiac Neuroses. John A. Robison.
92 *The Neurology of Angina Pectoris. William T. Eckley.
93 *A Plea for Enterostomy in Acute Intestinal Obstruction. Emanuel J. Senn.
94 Sarcoma of the Pituitary Body. Carl D. Swenson.

Denver Medical Times, February.

95 Typhoid Fever Aborted. R. G. Woodworth.
96 The Use and Abuse of Glasses. T. A. Grigg.
97 Conservatism in Pelvic Suppuration. John O. Polak.
98 Principles of Asepsis Applied to Operative and Other Wounds of the Eye. Edward Jackson.
99 Observations on and Deductions and Generalizations from the Administration of About 1000 Anesthetics. A. A. Kerr.

Quarterly Journal of Inebriety (Hartford, Conn.), January.

100 Is Alcohol a Food or a Poison? Dr. Kassowitz.
101 *The Influence of Alcohol on Muscular Work. E. Destree.
102 *On the Action of Alcohol. G. Sims Woodhead.
103 "The Influence of Alcoholic Liquors on Mental Work." Dr. De Boeck.

Obstetrics (N. Y.), February.

104 Fifty-eight Cases of Puerperal Eclampsia Without Mortality. W. Stroganoff.
105 *Irreducible Incarcerated Retroflexed Gravid Uterus. William A. Quinn.
106 Case of Puerperal Eclampsia with Kidney Failure and Facial Paralysis. Ewing Marshall.
107 Vertex Presentation in the Fourth Position. Thomas S. Bullock.

Journal of Nervous and Mental Diseases (N. Y.), February.

108 A Case of Cortical Sclerosis, Hemiplegia and Epilepsy, With Autopsy. Charles L. Dana.
109 *Diffuse Degeneration of the Spinal Cord. (Continued.) James J. Putnam and E. W. Taylor.

Woman's Medical Journal (Toledo, Ohio), January.

110 The Normal Placenta. Boose Tucker.
111 Smallpox. (Continued.) Ellen H. Heise.

New England Medical Monthly (Danbury, Conn.), February.

112 General Considerations Relative to the Etiology, Pathology and Treatment of Neurasthenia. A. D. Rockwell.
113 Some General Causes of Inebriety. T. D. Crothers.
114 The Principles of Diagnosis of Lesions of the Brain. John Punton.
115 Notes on Fractures of the Major Bone Shafts Contiguous With or Involving the Articulations. Thomas H. Manley.
116 Asthma and Its Treatment. A. E. May.
117 Rectitis: Operation Advised and Refused: Blood Cured. T. J. Biggs.
118 Lyptol in Minor Surgery. L. J. Pritchard.

Medical Times and Register (Philadelphia), February.

119 Local Anesthesia in Hemorrhoidal Operations and All Varieties of Minor Surgical Work. O. W. Green.
120 Exclusion of the Intestine. E. Terrier and A. Gossel. Management of Cancer of the Large Intestine. R. De Bovis.
121 Aspirin. E. W. Bing.

Canadian Journal of Medicine and Surgery (Toronto), March.

122 Cerebrospinal Meningitis. Alexander McPhedran.
123 Report of a Case of Forcible Reduction of the Deformity of Pott's Disease. H. P. H. Galloway.
124 Annual Address of Chairman of Provincial Board of Health. Harry E. Vaux.
125 *The Morbid Anatomy and Pathology of Hematemesis and the Surgical Treatment of Hemorrhage from Gastric and Duodenal Ulcers. G. E. Armstrong.

Journal of Medicine and Science (Portland, Me.), February.

126 State Laboratories as Aids to Sanitary Work. Samuel W. Abbott.
127 The Management of Occiput Posterior Positions. Stanley P. Warren.

Hot Springs Medical Journal, January.

128 *What Is Normal Menstruation? George J. Engelmann.
129 *An Operation for the Treatment of Marked Rectal Prolapse in Women. J. Wesley Bovee.

Physician and Surgeon (Detroit and Ann Arbor, Mich.), January.

130 Tuberculosis of the Knee-Joint and Other Cases in Orthopedic Surgery. Daniel W. Marston.
131 Obstruction of the Bowels. Theodore A. McGraw.
132 Neuralgia of the Fifth Nerve. Robert McGregor.
133 *Pathology and the Antiseptic Treatment of Smallpox. Alonzo Bryan.
134 Shortening of the Round Ligaments as a Conservative Element in Pelvic Surgery. Howard W. Longyear.

Kansas City Medical Record, February.

135 Discussion of the Treatment of Diphtheria. Charles H. Lester.
136 The Treatment of Puerperal Convulsions. J. W. P. Smithwick.
137 Brain Diseases. E. E. Gilmore.

Fort Wayne Medical Journal-Magazine, December, 1900.

138 *X-Rays. B. W. Rhamy.
139 Neuralgia. Frank M. Greenwell.

St. Louis Courier of Medicine, February.

140 *Influenza in Infants. John Zahorsky.
141 The Theory and Therapy of Typhoid Fever: With Special Reference to the Modern Antiseptic Treatment. Charles Franklin Hope.
142 Upon Certain Fractures. Norvelle Wallace Sharpe.

Therapeutic Gazette (Detroit, Mich.), February 15.

143 The Treatment of Carcinoma of the Lower Lip. John Chambers Da Costa.
144 The Treatment of Chronic Suppurative Inflammation of the Middle Ear. S. MacCuen Smith.
145 The Value of Continuous Catheterization in Some Genito-Urinary Affections. H. M. Christian.
146 The Management of Nasal Catarrh. Charles Prevost Grayson.
147 Formaldehyde. A. A. Young.
148 A Note on the Treatment of Cirrhosis of the Liver. F. J. Bowles.

Medical Herald (St. Joseph, Mo.), February.

149 Report of a Few Surgical Cases. H. Hapeman.
150 Hints on the Treatment of Bronchial and Pulmonary Affections. Henry S. Fendler.

Southern Medical Journal (La Grange, N. C.), February.

151 Specific Urethritis. H. I. Bass.
152 Comparative Value of Laboratory and Bedside Diagnosis. (Concluded.) E. C. Levy.
153 Suppression of the Urine as a Complication in Dysentery. Joel Crawford.
154 Clinical Aspect and Treatment of La Grippe. J. W. P. Smithwick.
155 The Comparative Value of External Applications in the Treatment of Acute Pulmonary Disease. J. W. P. Smithwick.

Texas Medical Journal (Austin), February.

156 A Report of Four Surgical Cases. Nephrectomy, Hysterectomy, Etc. Henry K. Leake.
157 Indigestion. C. F. Ulrich.

Texas Medical Gazette (Fort Worth), February.

158 The Care of the Insane in Our State Institutions. Robert. B. Sellers.
159 Foreign Body in the Brain. Frank R. Ross.
160 Early Diagnosis and Treatment of Cancer of the Cervix. F. D. Thompson.
161 A Rare Case of Tubal Pregnancy. U. H. Nixon.
162 The Necessity of Coercive Measures in Suppressing Smallpox Epidemics. H. C. Whitehead.
163 A Case of Orbital Cellulitis. Drs. Gray and Thompson.

Medical Standard (Chicago), February.

164 Advantages of Sanitarium Treatment. George F. Butler.
165 European Health Resorts and Sanitariums. David Paulson.
166 Private Institutions for Mental Diseases. Frank Parsons Norbury.
167 The Loomis Sanitarium. J. Edward Stubbert.
168 Sanitarium Treatment of Drug Habits. T. D. Crothers.
169 Craig Colony for Epileptics. Wm. P. Spratling.
170 Hot Springs as a Health Resort. James T. Jelks.
171 A Phase of Hospital Treatment of the Insane. Wm. G. Stearns.
172 The Work of a Health Board. J. N. Hurty.
173 Treatment of Pneumonia. Wm. F. Waugh.
174 Treatment of Syphilis. G. Frank Lydston.
175 Typhoid Fever; Its Complications and Sequelæ. J. T. Moore.
176 Treatment of Syphilis. Wm. S. Gottheil.

AMERICAN.

1. **Dangerous Operations.**—Deaver's paper is a protest against the indiscriminate use and abuse of three operations, excellent procedures in themselves if properly and justly employed. These are repair of the cervix, curettement, and rapid dilatation of the cervix. What he insists upon particularly is antiseptic preparation of the field of operation, including shaving, use of soap and water, permanganate of potash, oxalic acid, bichlorid of mercury and carbolic acid solutions, with iodoform gauze. These rules of antiseptic detail must be followed. He is a firm believer in rubber gloves, which not only protect the patient, but also the surgeon. We can not boil the hands, but we can boil the gloves, and it is easy to change them in changing operations and thus insure asepticity. He also warns against operations on the cervix or its canal in the presence of a latent or active inflammation, or adhesions binding down the uterus.

3. **Urinary Hyperacidity.**—The fact that certain symptoms of bladder irritation are some times observed without any vesical infection, is noticed by Brown, who finds the cause for some of these rather mysterious cases in an extreme hyperacidity of the urine, which is often itself increased by the increased irritability of the bladder; this hyperacidity being itself attributable to general neurotic, neurasthenic and hysterical conditions or, in other words, it is a vesical neurosis. Nine cases are reported of this condition, relieved by treatment.

4. **Multiple Brain Abscesses.**—Claytor reports a case of multiple brain abscess following empyema, and gives, from the literature, a list of fifty-eight cases of brain abscesses resulting from primary lung disease.

5. **The Suprarenal in Epistaxis.**—Cases of long-continued nasal bleeding obstinate to treatment sometimes occur, and such conditions are the subject of Somers' article. He reports two cases—one of which might be considered extreme in its duration and obstinacy—which were treated by the use of suprarenal extract with great success. The results obtained, he thinks, indicate that it has a further action than that of vascular constriction. It seems to tone up the parts and assist the healing processes like no other remedy. He, therefore, concludes that in addition to its vasomotor effects the drug is of great value for its local nutritive effect and as a pure muscle tonic.

6. **Biochemical Basis of Pathology.**—Bunker's article goes into details of organic chemistry. He comes to the conclusion of Pasteur, that there is some asymmetric force or forces acting in all tissues endowed with life, which is a profound modifier of chemical affinity as manifested in laboratory reactions.

8. **A New Blood-Stain.**—After noticing the stains which have been in favor, such as those of Jenner, Ehrlich, Plehn and Prince, Rosenberger gives the results of his endeavors to find a more durable blood-stain in combination with basic dye. Phloxin showed the granules of the leukocytes beautifully, and methylene blue being one of the best and most uniform stains, he tried these in combination. The formula which worked the best is as follows:

R.	Saturated aqueous solution of methylene-blue	50
	Saturated aqueous solution of phloxin	20
	Alcohol—95 per cent	30
	Water—distilled	60

He remarks that a precipitate generally forms and the stain needs "shaking before using." The blood-films need to be fixed by heat—115 to 120 C. for 20 minutes—or in equal parts of alcohol and ether, or absolute alcohol. The stain works well in either case. If the preparation is dried from alcohol and ether, the stain is applied and allowed to remain from one to three or four minutes, washed freely in water, dried and mounted in balsam. This is also a fairly good stain for malarial parasites of any variety. It has the advantage of greater durability over those previously employed.

9. **The Use and Abuse of Spectacles.**—The great increase in the use of spectacles is first noticed by Derby, who suggests that ophthalmic physicians as well as opticians may make mistakes. He thinks that probably glasses are worn too much in cases of hypermetropia and too little in myopia. A slight degree of astigmatism, he thinks, can be let alone and, as regards the use of prismatic glasses, it is more and more frequently thought to be the fact that apparent muscular anomalies vary directly with conditions of general health. He, therefore, holds that these may be over-used.

12. **Veratrum Viride.**—This drug, according to Isham, has largely gone out of use among city practitioners, though it still holds its own in the country. He believes there are many cases where its value is not appreciated, and reports six, all of peritonitis, having its origin in appendicitis, in which it was employed with advantage. Its first effects are referable to the glandular system, exciting the sudoriferous glands, the salivary and the liver. These have a therapeutic significance not to be lightly passed over. Especially the action of the sweat glands and of the liver is of importance in aiding the system to overcome toxic states. Its action on the heart also is possibly beneficial. It lowers the temperature through its action on the sweat glands, and he suggests that its direct action on the

neuron may better explain its behavior than the simple statement that it is a depressant of the spinal cord. Its action on the heart muscle itself or its ganglia is suggested, by Isham, to be beneficial in squeezing out waste products and bringing the organ down from an overdistended mechanical organ to one working in perfect order. He believes it may also be a most excellent remedy in acute alcoholism, and the possibility of death produced by it is not considered a serious one.

13. **Delirium Tremens.**—Warbasse reports a case in the practice of Dr. Pilcher, in Brooklyn, where the injection of 40 ounces of saline solution at a temperature of 116 F., into the median cephalic vein in a severe case of delirium tremens, was followed by rapid improvement and recovery. He thinks this method may aid by increasing the amount of circulating medium, diluting the toxins, stimulating excretion, and improving the action of the heart.

14. **Yohimbin.**—This drug, which has been studied in Germany by Loewy, Mendel and others, appears to be a powerful aphrodisiac. From animal experiments it appears to be a central paralyzer of motility, but not of sensibility. This is not a poisoning of the muscles themselves. Mendel has found the drug useful in sexual neurasthenia, but Bartholow hopes we will find it useful in albuminuria, exerting an action of substitution in diseases of the renal and genito-urinary system. More extended clinical experience, however, is required.

15. **Thymotal.**—This name is given to a carbonate of thymol prepared by Pool, which he claims has special advantages in ankylostomiasis. It is a neutral substance with a fusing-point of 99 C., a boiling point of more than 400 C. It gives no other reaction, save that it is divided into thymol and carbolic acid by alcoholic solution of potassium. A boiling aqueous solution of potash does not break it up, and neither acids nor the human stomach have any effect on it. It is odorless, is not vomited, does not cause dizziness, and is broken up in the body by the bile and mucus. Ankylostomiasis, for which it was devised, seems more rapidly affected by it than by thymol itself. For adults, the dose is 30 gr.; for children, 15 gr., and for babies, 7½ gr., three or four times daily. The treatment must be continued for four days, and a purgative be taken on the fifth, after which the whole treatment must be repeated until no more ankylostomata are found in the stools.

21. **The Axis-Traction Forceps.**—Marx reports his experience with the Tarnier axis-forceps and shows their advantages. He also describes a special method which he calls rotary axis-traction, that he has employed and by which rotation can be brought about without the lesions to the soft parts resulting from the use of ordinary forceps in these maneuvers.

22. **Metrorrhagia.**—The etiology of metrorrhagia due to inflammatory processes in the pelvis is discussed by Cragin, who thinks the usual order of source and sequelæ as regards the endometrium is: 1. Chronic congestion; 2, chronic inflammation; 3, menorrhagia and metrorrhagia. The muscle wall of the uterus itself may take part in the production of the symptom through tumors and chronic interstitial inflammation with atrophy of the muscle tissue and increase in new connective tissue. In some cases, however, the condition seems to be caused by lack of sufficient elasticity in the uterine muscle, interfering with normal muscle contraction. The blood vessels of the uterus, if sclerosed, so as to destroy their elasticity, may naturally produce the morbid conditions. Occasional cases are met with where the endometritis is slight and the hemorrhage seems to be due to lack of contractile power in the arterial wall. The treatment of metrorrhagia depends largely on its etiology; with chronic endometritis, curettage and relief of congestion is best; if acute endometritis exists, cleanliness, drainage and rest. If the symptom is due to interference with the muscular contraction of the walls of the vessels, the treatment depends on the presence or absence of hypertrophied endometrium. The presence of the latter indicates curettage, possibly repeated several times. In the absence of hypertrophied endometrium, or if persistent after repeated curettage, metrorrhagia may justify hysterectomy.

24. **X-Rays in Tuberculosis.**—Rudis-Jicinsky reports experiments made by putting sputum in cultures of bouillon in boxes and treating them with the *x*-ray. He found that certain *x*-rays are similar in their actinic properties to the violet rays of the spectrum, and that various bacteria react differently under such radiation, according to the quality of the plasma and the degree of liquid they contained. Mildly alkaline cultures seem to favor the growth of tubercle bacilli, while in acid media they are rendered inert. Rabbits were inoculated from the cultures mentioned, and their secretions rendered acid or alkaline. In these, where the alkaline treatment was given, fatal tuberculosis ensued. In the other case the animals seemed to do well and lived for two years after exposure to the *x*-ray, and examinations showed healed tuberculous lesions. From the results of these experiments he was led to try, the last two years, the *x*-ray in early cases of tuberculosis that came to him for treatment, with the results that from 20 selected cases, in one year there were 2 deaths, 1 of suicide, 4 failures, and the rest are now doing comparatively well. The time of exposure varied from ten to fifteen minutes in each case, the rays exposed at a distance of fifteen to eighteen inches from the body and the fluoroscope applied to the opposite side. He will not say that his cases were cured by the *x*-ray exposure only, for there may have been a spontaneous cure, but they certainly got well. As regards the danger of dermatitis, etc., he can prove that there is absolutely none if the exposures are not unnecessarily prolonged and certain precautions are observed. Treatment must be stopped at once, on the first trace of any burning, itching or discoloration of the skin. He believes that this method has a future and is worthy of extended trial.

25. **Gastric Carcinoma.**—After reporting four cases of carcinoma of the posterior wall of the stomach, treated by palliative anastomosis with gastro-enterostomy and the Murphy button, Vanderveer offers the following as practical deductions: 1. In all cases of continued gastric disturbance that do not yield to medical treatment, careful examination and experiments should be made as to the possibility of malignancy being present. 2. Whether positive diagnosis of malignancy is made or not, the patient continuing to emaciate and suffer, exploration should be done and, if there is any malignant growth, gastro-intestinal anastomosis should be made along the lines suggested by Dr. Weir. 3. The malignant growths in the posterior wall of the stomach are certainly more difficult of diagnosis and sometimes escape the notice of the most careful diagnostician. 4. When an exploratory incision shows that malignant growth in the posterior wall is not possible of removal by resection or otherwise, we should not refuse our patient the benefit of gastro-intestinal anastomosis. 5. In all cases the blood should be carefully examined as a part of the history of the patient, in order to learn of the conditions that may have a bearing on the diagnosis.

28. **Rheumatic Deformities.**—Gibney reports twenty cases of post-rheumatic and arthritic joint deformities, with the results of treatment by various methods. It is difficult to fix upon any one form of treatment, but he can not refrain from commending the forcible breaking of adhesions when inflammatory conditions have subsided or frequent recurrence to these operations and the judicious use of plaster-of-Paris. His faith in absolute immobilization as a promoter of absorption of chronic inflammatory products increases year by year. The protection of joints with limited range of motion by apparatus within the bounds of this motion is also to be commended. There is hardly a joint in the body but will tolerate considerable force at certain times. The treatment which has been most efficient he sums up as a judicious management of the case throughout, correction of deformity, partial restoration of function which renders the patient helpful, and improvement is sure to follow.

29. **Inspection of the Female Bladder.**—Pryor describes a cystoscope devised by himself, consisting of a main tube for inspection alongside of which is attached a smaller tube for carrying the lamp and a stem which holds it. The tube for

illumination extends beyond the tube for inspection, and consequently the rays of light project beyond and outside the latter, no rays entering it. The lamp, lampholder and wires are completely insulated. The advantages of this cystoscope are that the tube for inspection is free from obstruction and free from lamp rays, either direct or indirect, the absence of the necessity of focussing rays of light, the passage of rays of light directly to the part to be inspected, absence of disadvantages inherent in the use of Nitze's cystoscope, the perfect ease with which demonstration can be made, and lastly the absence of heat, and of urine about the trigone and the non-necessity of pumping it out. He lays special stress on the posture which seems, from the illustration, to be a sort of combined Trendelenburg and lithotomy position. He points out its advantages over the knee-chest posture.

30. **Ureine.**—Chace and Gies criticise Moor's recent paper on this subject, maintaining that his chemical methods are faulty, that his ureine is not a chemical species, but is a mixture containing several of the organic substances and a considerable portion of inorganic salts originally found in the normal urine, and its toxicity can be referred to some of these. Consequently it adds nothing to our knowledge of the cause of uremia, nor can his deductions regarding the biologic significance of this urinary complex be accepted.

31. **Dislocation of the Thumb.**—After first noticing the different methods devised for reducing thumb dislocation, Erdmann describes his own. In the case of dorsal dislocation, the operator places his thumbs on the base of the proximal phalanx and the cushion of his index fingers on the dorsal extremity of the metacarpal bone. The forces are then applied in the opposite direction; the index finger pulls the metacarpal bone in a condition of extension or abduction while the thumb raises and pushes the phalanx in a position of flexion. Should the rare condition of volar dislocation exist, the procedure in reference to the operator's thumb and index finger is reversed, the thumb lifting and extending the distal phalanges and adduction or flexion of the metacarpal bone made by the index finger. This method has been used by the author since 1887, without any failures.

32. **Tuberculosis in Prisons.**—Knopf remarks on the prevalence of tuberculous disease and describes the precautions that should be taken; the isolation of tuberculous patients from their fellows, etc., the use of masks to catch the germs when coughing, and the various methods to counteract the prison depression. Aside from any sentimentalism, he thinks we should specially endeavor to combat tuberculosis in this class because they are liable to spread the disease on their discharge.

39.—See abstract in THE JOURNAL, XXXV, p. 52.

41. **Xeroderma Pigmentosum.**—Wolff reports several cases of this condition occurring in one family in South Carolina. There was no heredity to account for the disorder, so far as known. Of the six children, two boys and a girl were infected. The disease appeared in each instance in the first summer of life after exposure to the sun, as sunburn. The sunburn did not go away until freckles appeared, which spread and deepened; the skin thinned and shrunk in places; then followed ulcerations, outgrowths and ophthalmic complications. The general health, excepting in one patient, remained unaffected.

50.—**Spinal Cocainization.**—Stone reports his experience with spinal cocainization in obstetric cases, and states that the sudden unpleasant symptom of headache can generally be controlled by glonoin in 1/50 gr. doses, or by hyoscin hydrobromate, 1/150 to 1/200 gr. doses, especially if given just before the injection of cocain. It also reduces the frequency of nausea and vomiting. The high temperature which follows he attributes to tampering with the pressure of the cerebrospinal fluid within the canal, as the same symptoms follow the injection of normal saline solution and other internal injections. In one case, where 1/12 of morphin sulphate was added to the cocain injection alarming symptoms of morphin poisoning ensued. He therefore thinks it is unsafe to use it. As regards the dangers, he thinks the only cases of death from lumbar puncture were from those of cerebral neoplasms and hydrocephalus, where the too sudden withdrawal of the cerebrospinal fluid has caused death. The advantages of the method are that the patient is absolutely relieved from pain for hours, the accoucheur is relieved from anxiety after a favorable injection, and the presence of the anesthetist and his expense can be dispensed with. Too much stress can not be laid on the importance of absolute asepsis during the injection.

54. **New Formation of Urethra.**—Noble reports a case in which, after two unsuccessful operations, he performed a third in which he sutured the mucous membrane over the small sigmoid self-retaining catheter, using what was left of the anterior wall of the original urethra and, between the external orifice of the urethra and the clitoris, the mucous membrane of the vestibule was utilized. The left labium minus was selected also as a tissue from which to form a flap. It is easily drawn over the raw surface and well back into the vagina, and attached by interrupted catgut suture to the raw surfaces which had been prepared and sutured with silkworm gut sutures to the right border of the raw surfaces along the urethra and within the vagina. At the anterior end of the new urethra, near the clitoris, the lateral surfaces of the labium majus were sutured together. In this way not only the floor of the urethra was made of the left labium minus, but a flap of considerable thickness was secured over the region of the neck of the bladder. The result was perfect, and he recommends to others who operate in similar conditions, to use the labium minus in this way. So far as he knows, its utilization thus is original with him.

66. **Optic-Nerve Fibers.**—Seggel reports a case, observed by him, in which there was pronounced hemianopsia, which he accounts for by the aid of accessory symptoms, paralysis of the oculomotor nerve, non-impairment of the sense of smell, as due to infection of the posterior portion of the chiasm. He also quotes another case which had already been reported by Seydel, in which there was a fibroma of the dura mater, clinically located, that had been producing pressure on the left papillomacular bundle, and removed, relieving the condition. These two cases, he thinks, serve to prove that the papillomacular bundles lie in the dorso-medial location.

73. **Tension in Atrophic Eyes.**—Ischreyt takes up the question of ocular tension, illustrating his views by cases. Since the intraocular tension depends on the influx and outflow of liquids, its disturbance can only arise through disorders in this relation. The condition of increased tension has been shown possible by the interference with the outflow uncomplicated by diminished influx. If the disturbance has once taken place there is added an increased secretion brought about by this cause. Both factors unite in bringing about the condition known as absolute glaucoma. While in many conditions of hypertony the disturbed relation between influx and outflow depends primarily on the interruption of the outflow and rarely upon the primary hypersecretion, it is natural to assume that hypotony is primarily brought about by diminished influx, and an investigation on atrophic eyes reveals, indeed, marked injury of the secreting portion of the eye—the ciliary processes. As long as diminution in secretion is slight it may be compensated by increased activity of other portions of the secretory area, and also the lack of aqueous humor may be compensated for by contraction of the elastic capsule of the eye, but with any considerable diminution of secretion considerable hypotony occurs. A slight cause may be sufficient to destroy the balance. While the normal channel of exit, the plexus venosus ciliaris, is free, and the hypotony at the most has caused only a slowing of filtration, the destruction of the ciliary processes and the iris forces the blood of the anterior and posterior ciliary arteries into new channels and thus gives rise to an increased anterior venous outflow; the diminution in tension and the increasing of the collapse of the ocular capsule, remove pressure from the vessels entering the venæ vorticosæ and allow them to dilate; the more the pressure sinks the easier is the venous outflow. Thus a vicious circle develops, and results in a condition known as atrophy of the ball. The rapid outflow of venous blood prevents any general diminution in the arterial current, and thus

no secondary, compensatory endarteritis develops. As regards the compensatory arrangement of the eye it seems probable that the anterior venous channel of outlet acts as a regulator of circulation in the anterior segment of the ball; in case of interference either in the venous or arterial area the excess blood is easily carried off through these channels.

74.—See abstract in THE JOURNAL of January 12, p. 127.

75.—Ibid., p. 125.

83. **Myocarditis.**—The pathology of myocarditis is noticed by Edwards, who remarks that we can not clinically distinguish with absolute certainty the difference between acute and chronic degenerations and inflammations. Much of our present confusion is based upon the fact that the microscope can not gauge the degree of cardiac inco-ordination and often fails to indicate its cause. Chronic myocarditis must be studied in the light of more acute changes in which successive pathologic alterations are most easily observed. It is probably not a disease of itself, but a sequel of previous retrogression. It is a secondary process, it plays no active rôle, but compensates for the destruction of the heart tissue while it is itself a measure of that loss. While valvular disease is not necessarily affiliated with myocarditis, it is indirectly associated with it. The condition may be complicated by partial heart aneurysms and heart ruptures.

84. **Chronic Myocarditis.**—According to Quine, myocardiac diseases are more frequent and important than generally supposed. The false diagnosis of the condition is rarer than the failure to recognize it. Among the earliest symptoms is dyspnea; Cheyne-Stokes respiration commonly occurs during sleep. The patient may not be able to lie down on account of the gravity of the dyspnea. The pulse is ordinarily slow, fever intermittent and irregular. Intermittency is a more common feature than ordinary irregularity. There is often actual pain in the region of the heart, and the irregularity may be felt by the patient himself. The area of cardiac dulness is usually increased, the apex-beat displaced downward. The aortic second sound is accentuated, indicating arteriosclerosis. Increase in the volume of the heart, diminution in the pulse, signs of weakness of the muscles indicate failure. Local and physical debility are common in advanced stages. The pseudo-apoplectic attacks, and occasionally real apoplexy, may be the terminal complications. When the heart muscles begin to yield, dilatation takes place, symptoms of venous congestion appear in all parts of the body—bronchial catarrh, lung edema, liver enlargement, gastro-intestinal catarrh; renal insufficiency is an early and almost constant symptom. Notwithstanding the tendency to somnolency sleep is unrefreshing and disturbed. In the advanced stages the cardiac impulse is feeble, the heart signs weak, tremor cordis, vertigo and other symptoms appear.

88. **Prognosis of Chronic Myocarditis.**—The following is the summary of Preble's paper: 1. Chronic myocarditis is an incurable, progressive disease, which does not show itself clinically until considerably advanced. 2. While the prognosis is determined by the site and extent of the process, there is no constant relation between the intensity and duration of the clinical manifestations and the pathologic changes. 3. Because of these facts, the process must inevitably cause death, but it is impossible to foretell whether in a short time or after the lapse of years, and whether it will occur suddenly or after a prolonged period of cardiac insufficiency. 4. The more prominently marked the paroxysmal manifestations, the angina, pulmonary edema, and asthma are, the more probable is sudden death. 5. The more marked any renal, pulmonary or arterial changes are, the more unfavorable the prognosis. 6. The better the habits, financial condition and intelligence of the patient, the better the prognosis, other things being equal.

92. **Angina Pectoris.**—According to Eckley, angina pectoris is a neuralgia of the cardiac plexus from which pain is reflected to all parts of the body. The anatomical order of nerve involvement, both primary and reflex, seems to him as follows: 1. Cardiac plexus. 2. The brachial plexus. 3. The intercostals. 4. The phrenic. 5. The trigeminus.

93. **Enterostomy in Obstruction.**—Senn reports two cases, and in conclusion emphasizes the following points: 1. The value of temporary enterostomy in acute intestinal obstruction in selected cases, especially where facilities are not favorable for a laparotomy, and where the patient's condition does not warrant such an operation. 2. Enterostomy is a simple operation, requiring ordinary skill, while laparotomy with radical treatment of the obstruction is very critical. 3. The opening in the intestine should not exceed one-half inch in length, parallel with the axis of the bowel, thereby readily closing after its purpose has been fulfilled. 4. If the obstruction persists after enterostomy, a radical operation can be performed at a later date, when the acute symptoms have passed away.

101. **Influence of Alcohol on Muscle Work.**—The conclusions of Destree's paper are that alcohol has an apparent favorable effect on the work product, whether the muscle is weary or not, which appears almost immediately, but is very transitory; directly afterward it has a very decided paralyzing effect. About one-half hour after taking alcohol the muscle power reaches the maximum; subsequent doses increase with difficulty. The subsequent paralyzing effect of alcohol outweighs the momentary stimulation. The total work product is less than is produced without it. Similar paralyzing effects are not observed to follow the use of tea, coffee, etc.

102. **The Action of Alcohol.**—The action of alcohol in altering the functions of cells subjected to pathogenic organisms is the subject of Woodhead's article. He calls attention to the experiments and observations of various authorities, especially those of Abbott and Deléarde. These show that attenuated disease-producing organisms, which under ordinary circumstances do not kill, bring about such a result when the animal has been previously treated with alcohol, for example in rabies, tetanus and anthrax, and Deléarde draws the conclusion that patients who have been bitten by a mad dog should abstain from the use of alcohol, not only during the process of treatment, but for a long period afterward, while immunity is being gained. There is no doubt that in addition to its specific action alcohol has a general mal-nutritious effect, in its action on the mucous membranes of the stomach, etc. The susceptibility induced by alcohol to excess is somewhat similar to that induced by starvation, in which we see the resistance of animals to particular forms of infection very markedly diminished.

105. See abstract in THE JOURNAL, XXXV, p. 1501.

109. **Degeneration of Spinal Cord.**—The general conclusions derived by Putnam and Taylor are: 1. That a well-defined lesion of the nervous system particularly localized in the cord exists, which may for the present be termed simply "diffuse degeneration." 2. That no fundamental characteristics of the lesion have been found depending on different causes. 3. That anemic states have been shown at times to be a concomitant condition, but not necessarily a cause. 4. That the actual causes are still wholly obscure.

125. **Hematemesis.**—The surgical treatment of gastric hemorrhage is noticed by Armstrong, who reports five cases in which he has himself operated. He offers the following suggestions, putting aside the cases of sudden death: 1. If a patient vomits twenty ounces of pure blood and another twenty ounces in four to six hours, operation should be performed if the surroundings are favorable and the condition of the patient is such as to give reasonable hopes. 2. If a smaller hemorrhage of from four to ten ounces continues to occur at intervals, and medicinal and dietetic treatment or rest fails to arrest in thirty-six to forty-eight hours, surgery is applicable. 3. In so-called chronic cases which are not relieved by three months of medical treatment. 4. In any case and at any time, when, in spite of medical treatment, the patient is evidently passing into a condition of anemia where operative measures can not be undertaken with any degree of safety. As regards the operation, he says it is well to examine for external evidence of internal lesion but, failing to find this, it is well to open the anterior wall sufficiently to enable the thorough inspection of the whole of the mucosa. If the bleeding point can not be found, then pyloroplasty or gastro-enterostomy should be performed with a

view to secure such a degree of rest in the stomach walls as will favor clot and subsequent healing. If the bleeding point is found, treatment will depend on its locality and nature, extirpation of ulcer, ligation, thermocauterizing to stop oozing, etc. After operation, rectal feeding and salines are indicated.

128.—See abstract in THE JOURNAL, XXXV, p. 1500.

129.—Ibid.

133. **Smallpox.**—Bryan suggests the following in the treatment of smallpox: Scrub the skin with strong alkaline soap and water in order to remove the oil naturally existing, and then wash with alcohol and then again with 1 to 500 solution of bichlorid of mercury, following with a solution of peroxid of hydrogen, each of these washings being ten to fifteen minutes in duration. Finally, the parts are well wrapped in an envelope of borated cotton. In the case thus experimented on, this treatment was applied to the forearms and hands, where there was a distinct papillomatous eruption, with the result that the papules in this region failed to become purulent, while in other parts of the body they followed their regular course, with the usual results. He suggests this local method of treatment and alludes to Osborne's treatment as reported in THE JOURNAL for April 28, 1900, as supporting his general views.

138. **X-Rays.**—In his discussion of the *x*-rays and their use in surgery Rhamy says that when the subject and apparatus are so placed that the electric current is felt he fears an *x*-ray burn. The only one he ever had was produced under these circumstances, on himself, and he can produce a burn at will by simply adjusting the apparatus so that he can feel the current, then exposing long enough.

140. **Influenza in Infants.**—The almost invariable influenzal infection of infants during an epidemic is noticed by Zahorsky, who calls attention to the characteristic symptoms: The contagion, typical fever curve, typical appearance of fauces, catarrhal symptoms of upper air-passages, presence of bacilli. The common colds, he thinks, are not due to drafts, etc., but are often the effect of an influenza epidemic. In infants the afebrile form is exceptional. The characteristic fever curve is almost diagnostic. There are certain other signs, however, such as high fever in the morning, great irregularity and frequent relapses. The grippal infection in infants has the following characteristics: The anterior pillars of the fauces and the posterior edge of the soft palate are marked by a congestion, the inflamed margin of the velum palati being sharply defined and usually about one-fourth of an inch wide. The catarrhal symptoms are not so universal, but they are characteristic: The grippal infection of the small bronchial tubes in feeble infants is a very serious matter. The principal symptoms are cyanosis and great dyspnea; the respiratory murmur is feeble; infection of the lungs is not common. The clinical forms of influenza are enumerated as follows: 1. Acute fever with angina. 2. Acute coryza with or without fever. 3. Acute laryngitis with or without spasmodic croup. 4. Acute bronchitis. 5. Acute bronchiolitis. 6. Bronchopneumonia. 7. Lobar pneumonia. 8. Acute gastritis, and gastric duodenitis. 9. Acute myocarditis. Among the rarer lesions he mentions acute leptomeningitis, endocarditis, a peculiar pertussal cough, jaundice, hemorrhagic nephritis, otitis, nervous sequelæ, etc. The treatment is summed up in: 1. Rest and fresh air. 2. Careful attention to the diet. 3. Prevention of secondary infection. 4. Supervision and control of bodily functions.

FOREIGN.

British Medical Journal, February 23.

Remarks on the Conclusions of the Report of the Anesthetics Committee of the British Medical Association. GEORGE EASTES.—This article gives the conclusions of the report of the Committee on Anesthetics for the British Medical Association, with comments theron. The former can be given only in a somewhat abridged form. The conclusions are deduced from over 13,000 cases of chloroform anesthesia, 4595 of ether, 2071 of gas and ether, 2911 of nitrous oxid, and varying numbers from 155 to over 700 cases of anesthesia from various mixtures—A. C. E. mixture, chloroform and ether, etc. The cases of danger, including deaths, considered to be due entirely to anesthesia, occurred in a percentage of 0.582 per cent. of chloroform anesthesia, and in ether only 0.065. The highest percentage was under the chloroform group, which includes A. C. E. mixture and chloroform, A. C. E. followed by ether, etc., and the average danger rate was 0.584. Under the ether group, including only ether, gas and ether, ether with other compounds, etc., it was 0.085. Although, excluding nitrous oxid, ether was accepted as the safest routine agent, certain circumstances, the state of the patient, nature of the operation, etc., may make some other anesthetic or combination safer and easier. No method of administration of chloroform is safe from danger, but the danger largely depends on the anesthetist. There is no possible conclusion from the evidence as to the best method of administration of ether or gas and ether. The data warrant the conclusion that A. C. E. mixture should not be given in a closed inhaler, and this applies to all mixtures containing chloroform. The committee was not able to give any conclusions as to the best methods of restoration, but finds that anesthesia is more commonly associated with complications and dangers in males than in females, and that, not including infancy and taking anesthetics collectively, the complications and dangers increase with advancing age and the anesthetics are proportionately more dangerous as the gravity of the patient's state increases. Danger to life is specially likely to be incurred in the earlier stages, while the tendency to less grave complications increases with the duration of the anesthetic, and all complications increase with the gravity of operations. As regards chloroform, the Commission finds that chloroform is about twice as dangerous in males as in females. It is most dangerous during early infancy and after 30 years of age, and is more dangerous than any other anesthetic in cases of good health. In grave conditions it is still less safe, but the disparity between it and others is less marked. In a large proportion of cases the symptoms that are observed are those of primary circulatory failure. Imperfect anesthesia is the cause of a large number of cases of danger from chloroform, and vomiting, which may lead to trouble, seems to be more frequent under this drug than under others. Struggling is much more frequent under chloroform; it must also be regarded as a source of danger, and the tendency to circulatory complications increases directly with the relative amount of chloroform in the anesthetic employed. While vomiting is more common after ether, severe and prolonged vomiting is more frequent when chloroform has been used. Circulatory depression following anesthesia is more common after chloroform than after ether, and while the respiratory complications as a whole are equally frequent under ether and chloroform, those that occur under ether are of a trifling and transitory nature, and those under chloroform more grave and persistent. As regards ether, the complications of anesthesia are more frequent in males than in females, but more dangerous to the latter. Ether, when employed throughout or preceded by nitrous oxid or A. C. E. mixture, is singularly free from danger in healthy persons. The minor troubles due to laryngeal irritation and increased secretion are more common than under chloroform and its mixtures. Struggling occurs more frequently when given alone, but rarely leads to danger. The after-vomiting is more common with ether, but is usually transient, and bronchitis is much more frequent as an after-effect. With gas and ether the dangers are more common in females, but the complications are more frequent in males. Of other mixtures, A. C. E. holds an intermediate position between chloroform and ether, being more dangerous in males than females, but in a less marked degree than chloroform. The administration of ether antecedent to chloroform does not abolish the tendency to chloroform dangers. The other various mixtures and successions of anesthetics were recorded too infrequently to justify definite conclusions. As a general conclusion, the committee is convinced that by far the most important factor in the safe administration of anesthetics is the experience which has been acquired by the anesthetizer. In many cases the anesthetization completely transcends in gravity and importance the operation itself. To insure success

it is absolutely essential that an anesthetist of large experience should conduct the administration.

The Lancet, February 23.

Passive Effusion into the Knee-Joints, Occurring in Women and Young Girls. WILLIAM H. BENNETT.—Attention is called by Bennett to a painless and unnoticed effusion into the knee-joint of girls of 12 or 13 years of age, and in young women; a number of cases are reported. The alleged cause is often injury, but the condition seems to be somewhat dependent on the catamenial periods and uterine functions. It is well to always inquire into these painless swelling of the knee-joint in girls, say from 13 to 14 years, or women at the climacteric. If these functional irregularities exist there will generally be fluid in both knees, probably more on the right side. Though the patient may be convinced that it is due to some recent injury, the other factor is probably primarily responsible. In the treatment, correct interpretation of these cases is of vital importance. If attention be too much concentrated on the knee alone, the management may be misled. Primary treatment should be directed to correction of the faulty functions, while moderate exercise, massage of the knee and outdoor life are collateral indications. In any case splints and confinement should be avoided. The prognosis is always good provided the primary cause of the effusion can be cured.

The Diagnosis and Treatment of Abscess in Connection with the Vermiform Appendix. RUTHERFORD MORISON.—The following are the conclusions of Morison's article: "The early diagnosis of abscess in connection with the vermiform appendix is of great importance. A dangerous abscess may be present without any of the ordinary symptoms or signs of pus formation. The diagnosis is based upon the history of an acute attack of appendicitis and the presence of a definite tender lump. The position of the appendix and the relations of the abscess may be foretold by a careful study of the tumor. The diagnosis of pelvic cases in women is attended by special difficulties. In men and women bimanual examination may clear up an otherwise doubtful case. Spontaneous relief and possible cure may follow the discharge of pus into adjacent bowel. An abscess, though of appendicular origin, may be remote from the appendix and may be residual. Many of such pus collections are due to the localization of a general peritoneal infection which has been recovered from. Early operation is the proper treatment and with few exceptions the vermiform appendix should be removed at the same time as the abscess is drained (pelvic cases form the chief exception to this rule). The abdominal opening should be large enough to permit of perfect inspection of all manipulation and the abscess should be drained from behind."

Annales de la Soc. Med. de Liege, December.

Treatment of Goiter with Large Doses of Iodin. L. BECO.—In the writer's experience in Belgium, persons with goiter are usually anemic. He therefore administers potassium iodid, combined with ferrous iodid. If this treatment prove ineffectual, he orders tincture of iodin internally, which is suspended at the first symptom of gastric intolerance. One patient, with a goiter rebellious to all other measures, was completely cured in a few weeks with tincture of iodin, of which he took from 40 to 120 drops a day without inconvenience. Beco no longer gives it timidly, but increases from 15 to 30 or 40 drops during the first fortnight, and has had only one case resist this treatment. He generally prescribes 25 gm. of fresh tincture of iodin to 5 gm. of potassium iodid: 5 to 40 drops in a glass of water or beer three times a day.

Bull. de l'Acad. de Med. (Paris), February 12.

Appendicitic Black Vomit. DIEULAFOY.—Under the influence of the toxic infection of appendicitis, acute hemorrhagic ulcerations may be produced in the stomach, similar to the gastric hemorrhagic ulcerations of pneumococcus toxi-infection, of strangulated hernia, or simple ulceration. The ulcerative process is alike in each; there is an acute hemorrhagic necrosis of some small territory of the mucous lining of the stomach. When an arteriole becomes involved, hemorrhage occurs, which is more or less copious, repeated or fulminating. The alterations in the liver—icterus and urobilinuria—are due to the toxins generated in the appendix, as are also the alterations in the kidneys—albuminuria, oliguria, anuria and symptoms of uremia. The stomach lesions and hematemesis also form part of the appendicitic toxic syndrome, isolated or associated with other manifestations. Dieulafoy has observed six cases of this complication during the last nine months, all but two rapidly fatal, the patients being from 10 to 68 years of age. The operation was performed on the third or fourth day after the commencement of the appendicitis in each case, too late to prevent the progress of the toxic processes. The hematemesis appeared soon after, and was fatal at its second recurrence. Lucas-Championnière reports a somewhat similar case cured by alkaline lavage of the stomach.

Gazette Med. Belge (Liege), February 7.

Death from Use of Peroxid of Hydrogen. C. MOREAU.—The peroxid had been applied to an amputation wound. Its action on the catgut used for the ligatures caused them to come untied, and the occluding clots became disorganized, entailing secondary hemorrhage, with a fatal result.

Presse Med. (Paris), January 26 and February 20.

Uremic Icterus. A. DELTEIL.—A case of severe icterus is described which presented all the symptoms of uremic coma in addition to the icteric manifestations, a hepatonephritis, confirmed by the autopsy. The icterus evidently had been grafted on a preceding nephropathy which enhanced the gravity of the prognosis.

Agglutination of the Pneumococcus. V. GRIFFON.—The characteristic sero-reaction of the pneumococcus is most marked with cocci derived from the patient. Tests with 186 subjects revealed the participation of the pneumococcus in a number of cases in which its presence was unsuspected. The cocci agglutinate in lumps, then resemble fragments of pseudo-membrane and, finally, form in the shape of a cup. The test requires 1 to 2 c.c. of serum.

February 20.

Sterilization of Cocain. T. TUFFIER.—There are three methods of sterilizing cocain hydrochlorate, all of which are absolutely reliable and do not alter the essential properties of the drug. Tyndall's is the first, and most convenient for certain conditions. The second method is to heat the cocain in a water-bath or the autoclave to 120 C., in a fused tube or plugged vessel. The solution does not undergo any decomposition, and the variation in the light-rotating power is too insignificant to interfere in the least with its action. The third and usually the most convenient method does not require heat. It was devised by Roux and is merely sterilization by filtration through a Chamberland filter. The Chamberland porcelain hollow candle is supported by cotton in the neck of an ordinary test-tube. The solution of cocain is poured into the candle which is plugged with cotton. As the fluid filters through into the test-tube it is absolutely sterile. The only precaution necessary is to throw away the fluid first filtered—two or three times the contents of the candle—to allow the walls to become saturated. In all these processes a 2 per cent. solution is used and the light-rotating power does not vary from the standard—.72 degrees at 10 C. Extreme precautions are necessary to obtain a pure article.

Semaine Medicale (Paris), January 23 and February 20.

Localized Pain in Thorax a Sign of Perforation of Stomach in Peritonitis. J. L. FAURE.—Two typical cases are related in detail to demonstrate that acute disturbances of the viscera below the diaphragm, particularly perforation of the stomach, are accompanied by a sharp pain in the thorax, in the shoulder, or between or just below the scapulæ. In generalized peritonitis the determination of perforation of the stomach is of the greatest importance and, consequently, careful inquiry should be made for this thoracic pain in or between the shoulders, whether it existed at the commencement of the trouble, etc. If noted, it is almost pathognomonic of a perforation of the stomach or adjacent organ, and the abdominal incision should be made in the epigastric region.

Identity of Germ Causing Vaccination and Variola. M. FUNCK.—The author presents arguments to prove that

vaccination is not a microbian disease, but that it is caused by a protozoon which is readily recognized in the vaccination as also in the variolous pustules. Inoculation of this protozoon derived from either source produces all the classic symptoms of vaccination and protects animals against further inoculations. Vaccination is therefore merely an attenuated form of variola, and the immunization conferred by it forms no exception to the general laws of specific immunity. The sporozoa were first described by Pfeiffer.

Increase of Hyperchlorhydria by Opium. R. LEPINE.—Recent experimental research, reported by various writers, has shown that opium increases the secretion of hydrochloric acid, probably by central excitation, and consequently that it exaggerates the pains in hyperchlorhydria. This does not preclude the use of opium in case of carcinoma of the stomach, as there is no hypersecretion under these circumstances.

Artificial Burns in Treatment of Erysipelas. S. Z. RABINOVITCH.—During the last thirteen years the author has treated more than 200 patients by this method, with no deaths and no recurrences. He applies a moist gauze compress to the erysipelatous patch. A wad of cotton dipped in alcohol is placed on a metal plate, held with forceps, and the alcohol is ignited. The flame is then passed over the moist compress again and again as long as the patient can bear it. This maneuver is repeated nine to twelve times a day in three or four sittings. The superficial burn that results soon heals; the heat destroys the streptococci and the steam causes intense local leucocytosis.

Mixed Cocain-Ether Anesthesia. JABOULAY.—A subcutaneous injection of 1 c.c. of a 2.5 per cent. solution of cocain, just before general ether anesthesia, enables profound anesthesia to be rapidly produced with a minimum of ether.

Archiv f. Exp. Path. (Leipsic). February.

Compensation of Mitral Defects. D. GERHARDT.—Experiments made on dogs by the author of this communication confirm the significance of hypertrophy of the right ventricle as the essential factor in the compensation of mitral defects. This compensation, however, entails injurious after-effects by the alterations in the walls of the pulmonary arteries and lungs permanently subjected to such high pressure.

Archiv f. Kinderheilkunde (Stuttgart), XXXI, 1 and 2.

The Scientific Principles of Infant Feeding. A. MONTI.—The acidity of cow's milk must be reduced to that of human milk. This can be done with sodium carbonate, which also has the effect of rendering the action of rennet on cow's milk more like that on human milk. The albuminoid elements in the former can be made to approximate those of human milk by diluting with whey instead of water, which also affects the casein and approximates it to human milk. The whey also supplies the fat and the sugar required to render cow's milk more nearly like human milk. In Monti's experience infants have thrived best on milk sterilized by heating to 60 or 70 C., and then cooled to 6 C. and kept at this temperature until used.

Appendicitis in Children. P. SELTER.—Vomiting, obstipation, fever and other symptoms vary with different cases. The pulse sometimes shows no alteration, and no tumor can be discovered. Even the local pain is not always present, but there is one symptom that never fails. This is a palpable resistance of the right wall of the pelvis when palpated through the rectum. In 11 of Selter's 28 cases the little patient recovered spontaneously, including 2 or 3 who had had two or three previous attacks.

Archiv f. Klin. Chir. (Berlin), LXII, 2, 3 and 4.

Surgery of the Stomach. G. KELLING.—Among the points established by Kelling in the course of his experimental research on dogs, is that even a small amount of solid food may be followed by perforation after operation on the stomach, and that liquid food is much safer for a time. The rapid evacuation of the stomach that occurs after a gastro-enterostomy, is due to the lack of the motor inhibition normally exerted by the filling of the duodenum. Conditions are less favorable for intestinal digestion of albumin and fat after gastro-enterostomy, on account of the absence of the normal excitation of the flow of bile and of bile and pancreatic juice into the stomach, but the neutralization of hydrochloric acid is less perfect than when it has to pass the entire length of the duodenum. Consequently the loop for the anastomosis should be selected as near the stomach as possible. This and the other disadvantages of gastro-enterostomy become compensated in time if the organism has sufficient recuperative power. Hence the operation should not be delayed until the system is exhausted by the lesion.

Statistics of Sacral Extirpation of Carcinoma of the Rectum. W. PRUTZ.—The mortality in 542 cases collected by Prutz has been 115, or 21.2 per cent. He shows that Pichler's reports of a mortality of 14.3 per cent. in 563 operations are erroneous, as he included operations for other lesions than malignant tumors.

No. 3.

New Method of Removing the Seminal Vesicles and Vas Deferens. H. H. YOUNG.—The operation by the method described is very simple and comparatively devoid of danger. Two cases are reported. After catheterization of the ureters, a linear median incision is made, with a short transverse incision at the top just above the umbilicus. A surprisingly good view of the field of operation is afforded by this incision. The bladder is opened in case of suspected disease, the ureters catheterized, and the peritoneum detached from the posterior surface of the bladder wall. The vesicles and vas are isolated in the direction toward the internal ring. The upper portion of the prostate is then incised transversely. The testicle is taken out of the scrotum by an inguinal median incision, the spermatic vein ligated and the vas deferens severed. The rest of the vas can then be drawn into the abdominal cavity, and the testicle, vas and seminal vesicle are then easily removed. This route is much simpler and allows more radical operation than the sacral. The vesicle, and with it a circumscribed portion of the bladder, can be extirpated through a single incision and at one sitting.

Conservative Operations for Renal Retention. C. FENGER.—Kuester, Fenger and Bazy were appointed to present this subject at the recent International Medical Congress, in the section of urinary surgery. The thirty cases on record of conservative operations for renal retention from a stricture, valve-formation or spur in the ureter, are reviewed and tabulated in Fenger's report. They include ten personal cases; no other surgeon had a record of more than three at the time the tables were compiled. The stricture or valve-formation was found at the exit of the ureter in 26 cases, and below the renal pelvis in 3. Israel's was the only case cured by pyeloplication alone. The three deaths that occurred can not be ascribed to the operation in any case, as these conservative operations are simple and reasonably safe. Good functional results were obtained in 22 cases, that is, in 73 per cent. Recurrence of the obstruction and consequent retention compelled nephrectomy later in 2 of Fenger's cases. An obstruction at the pelvic orifice of the ureter may be treated by a transpelvic plastic operation or an extrapelvic incision, plastic operation and pyeloplication. Fenger prefers the extrapelvic incision for small cystonephrotic sacs, but a transpelvic plastic operation is necessary for a large sac, on account of the difficulty of reaching the ureter from outside the pelvis. In 2 of the 9 cases thus operated on, obliteration followed later. Six cases were treated by resection and reimplantation of the ureter. The results were gratifying in the 4 in which the operation was fully completed. The operation was extrapelvic in 11 cases, and proved successful in all but 1: this was a case of remittent, infected cystonephrosis in a small floating kidney. The stricture was below the pelvic orifice of the ureter. Inflammation persisted and the kidney was removed a year later.

No. 4.

Protheses for Gastro-Intestinal Anastomosis. G. KELLING.—The button should be made of absorbable material, but at the same time it must not be digested by the alimentary juices. To meet these contradictory indications, Kelling has devised a button in one piece, made of decalcified bone or ivory. To protect it from the digestive juices it is coated with rubber.

except in the wide groove on the outside, in which the intestine is tied. A ring of rubber fits into a shallow groove at one end of the button. After the intestine has been sutured in place in the wide groove the rubber ring is slipped out of the shallow into the wide groove, where it presses the intestine firmly against the button. As the intestine becomes necrotic the rubber ring takes its place on the button, but does not completely fill the groove and the digestive juices commence to work on the unprotected substance of the button. Tests on large dogs have been eminently satisfactory in regard to the advantages of the new button. The same principle is applied to a wooden button for suturing the colon after resection. The sutured portion of the intestine fits in a groove, folded back on itself as in an invagination, and the ring fits on the fold. Its pressure hastens necrosis of the part. In a cholecysto-enterostomy, for instance, Kelling has derived great benefit from the employment of two small, strong metal plates with rounded edges, 1½ by ¼ inches in size, with a hole at each end. A rubber thread is passed through the holes in each plate and one is introduced through a small incision in each end of the loop. By drawing the thread tight the flat surfaces of the two places are coaptated. The plates were released by the necrosis of the tissues between them, and evacuated the fifth to the eleventh day in the tests on dogs.

Means of Occluding the Stomach in Resection. G. KELLING.—Two strips of decalcified bone or ivory, with eight holes in each, are applied on each side of the stomach, above the part to be resected. They should be as long as the stomach is wide at the spot. They are then laced together through the stomach walls with a rubber thread which hermetically closes the organ when it is drawn tight. The strips have been applied in four operations on dogs, with brilliant success. In two dogs not killed until seven and nine days had elapsed, the strips had completely disappeared. [This suggestion recalls the method of hemostasis used on the liver in the operation to separate the Brazilian xiphopagus last year.—ED.]

Retrograde Sounding of Strictures of the Esophagus. H. ALAPY.—All attempts to pass a sound through the double cicatricial stricture proved unavailing in the case reported. Gastrostomy was done five months after the trauma, but efforts to penetrate the stricture from the stomach also failed until an elastic French bougie—No. 15.—olive-tipped, was inserted as far as the stricture in the cardia. A No. 20 silk catheter was then slipped on over the bougie to the stricture and the bougie withdrawn. A fine urethral bougie was then inserted through the catheter and this was finally worked through the stricture into the mouth. By this combination of bougie, catheter and urethral bougie false routes are avoided.

Centralblatt f. Chir. (Leipsic), February 23.

Absence of Sensibility in Abdominal Cavity. K. G. LENNANDER.—Clinical experiences are related in this communication which indicate that the stomach, intestines and mesentery, the gall-bladder, visceral peritoneum, kidneys and liver have no nerves of sensibility to pain, contact, warmth or cold. On the other hand, the parietal peritoneum is richly supplied with pain nerves. The healthy individual has no nerve-knowledge of the processes of digestion transpiring within him, nor of the functional activity of kidneys or liver. Ulcerations of the alimentary canal may exist without causing pain, and likewise calculi in the biliary passages. The only intimation we have of even strong peristaltic movements is the rumbling of gases. The cause of colic pains is the stretching of the parietal peritoneum in consequence of the acute distention of some portion of the intestines. Affections in the alimentary canal are not accompanied with pain until the parietal peritoneum becomes more or less involved, and adhesions form. In all cases of pelvic and generalized peritonitis palpation from the rectum and vagina is of the greatest importance, as the parietal peritoneum in the small pelvis can thus be directly investigated. These facts are important for abdominal surgery. The incision should be longer than usually made at present to avoid painful traction on the parietal peritoneum. By this means it is not necessary to have the anesthesia so profound, and the anesthetic can be suspended when the manipulations are restricted to the insensible viscera.

Centralblatt f. Gyn. (Leipsic), January 19, February 2 and 9.

Treatment of Backward Displacement of the Gravid Uterus. L. SEELIGMANN.—The incarcerated uterus was gradually forced into a slanting position with its longitudinal axis parallel with the second oblique diameter of the pelvis, by traction on the portio and gentle pressure on the fundus in the opposite direction. A colpeurynter was then placed under the fundus and, as it filled, the uterus gradually resumed its normal position, the patient reclining on the side, with the pelvis elevated, for two and a half hours. Four cases have been successfully treated in this way by the author.

Protection of the Perineum During Delivery. J. HOFBAUER.—As the head is passing the vulva, when the posterior angle of the anterior fontanelle is just beginning to emerge, Hofbauer gives the head a twist of 40 degrees at most to right or left. This brings the soft fontanelle opposite the perineum, and the danger of laceration is almost sure to be averted.

Healing Processes in Tubercular Affections. A. O. LINDFORS.—Retrogressive atrophy is the essential element in the healing of tubercular lesions, Lindfors is convinced. He has observed a case in which the atrophy due to the menopause arrested the tubercular process in one Fallopian tube, while the tuberculosis continued its progressive course in the other tube, in which the nutrition had been maintained by a growing cyst. He suggests that ligature of the vessels sufficient to cause atrophy, but not necrosis, may prove a valuable aid in the cure of tubercular processes.

Extirpation of Right Ovary Through Left Inguinal Incision. L. REMPRECHT.—Inguinal hernia prevented an incision on the side of the lesion. The removal of the ovary and cyst was comparatively simple, although the success of the operation was jeopardized by the abnormal shortness of the infundibulo-pelvic ligament.

Massage in Gynecology. R. OLSHAUSEN.—The only conditions in which massage has a favorable influence in gynecology are in case of a torpid exudation, all inflammatory symptoms long past, and then only when favorably located, with merely the abdominal wall between it and the fingers. Massage is applicable to tubal tumors only when they are hydrosalpingitic and it is possible to obtain the elimination of the fluid through the uterus. Peritoneal adhesions, hematocele, misplacements of vagina or uterus should not be massaged, although it is possible that they may benefit indirectly from massage of a surrounding exudate.

Deutsche Med. Wochenschrift (Leipsic), February 21.

Combined Chloroform and Oxygen Narcosis. WOHLGEMUTH.—A stream of oxygen into which chloroform is introduced a drop at a time is brought into the mask, excluding ordinary air. Wohlgemuth asserts that the effect is to induce a perfect narcosis "which will banish chloroform death from the world." In 140 cases in which he has applied this improved technique the pulse remained absolutely normal all the time, always full and slow, even in anemic patients in profound narcosis. There were never any disturbances in breathing, nor cyanosis; the color of the face was normal, even the lips were bright red in all cases. The patients awoke rapidly, and with a clear consciousness in five to ten minutes. Other surgeons are testing the method so that a sufficient number of anesthesias will be attained ere long to afford a basis for comparison with other methods of narcosis.

Tuberculosis Hospitals. G. KLUGE.—During the last four years Kluge has seen thirty healthy children become affected with tuberculosis in some form while a consumptive in their homes was disregarding all hygienic regulations to prevent infection of others. He urges legislation to enforce the removal of such inconsiderate sources of infection to some asylum, to protect the children in the home. Wilful disregard of the measures necessary to prevent injury to others should entail removal and isolation as inevitably as in the case of the insane.

Pflueger's Archiv f. Phys. (Bonn), January.

The Iodin in Iodothyrin. E. V. CYON.—Thyreoglobulin is evidently the albuminoid substance that contains the

iodothyrin complex in its molecule. The antagonism between the physiologic action of iodothyrin and of iodin on the vascular system is due to the iodin in some other combination in the thyroid gland. None of the other products of the gland possess the same properties as the iodothyrin, even although they may contain iodin.

Wiener Klin. Wochenschrift, February 21.

Cure of Incontinence by Paraffin. KAPSAMMER.—Three cases of incontinence of urine in women, due to laceration of the vagina and urethra or chronic cystitis, or dating from childhood, are reported by Kapsammer as cured by one or two injections of white vaselin—paraffin—6 c.c. at a time. The aim is to produce an artificial dam, similar to the prostate in man, around the urethral orifice. In Pfannenstiel's unfortunate experience the vaselin was injected in a ring, instead of in one spot, and he used a combination with a melting point of 45 C. Gersuny, the originator of the method, warns against using a vaselin with a melting point above 35 to 40 C. He injects it at a temperature such that it emerges from the needle in a worm, not in drops, and he always inserts the needle at the same spot, waiting a week between the injections. One other unpublished instance of embolism of the lungs has occurred in consequence of the injections, in the experience of a Vienna practitioner, but Gersuny states that he has never noted any inconveniences from the paraffin, in a constantly widening experience, even when the injections were made in the periproctal region or the orbit.

Gazzetta Degli Osp. (Milan), February 10 and 17.

Aspiration of Fluid in Acute Articular Rheumatism. F. ZAGATO.—The agonizing pains in the knee, in the course of acute rheumatic polyarthritis, were relieved instantaneously by inserting the small-sized needle of a Pravaz syringe and aspirating the fluid distending the capsule—about 60 c.c. The pains did not reappear, but the other knee required the same intervention in a few days. The operation was concluded by injecting a syringeful of a 2 per cent. solution of carbolic acid.

Electrotherapy in Exophthalmic Goiter. A. LAMARI.—A severe case of exophthalmic goiter is described as clinically cured after forty applications of electricity to the vagus and cervical sympathetic.

St. Petersburg Med. Woch., February 16.

Belladonna in Intestinal Obstruction. E. MORITZ.—For many years Moritz has been proclaiming the advantages to be derived from belladonna in the treatment of intestinal obstruction from any cause, and its superiority to all other medicinal measures. He administers by the mouth a pill of 1.5 mg of extract of belladonna, every four to six hours, until flatus passes. The first symptoms of transient intoxication appear after six to ten doses; dryness in the throat, agitation, sometimes delirium, but just before this point is reached the intestinal contents are evacuated, with no painful peristalsis nor vomiting. This treatment is applicable to all varieties of intestinal occlusion; can never do harm; sometimes removes the obstruction without further measures; untwists a slight volvulus; almost always relieves, and renders the conditions more favorable for operation if this becomes necessary. If fever persists after flatus passes, operation should not be delayed. He rejects atropin as too dangerous, but six physicians reported, last year in the *Muench. Med. Woch.* extremely favorable results obtained in severe cases of ileus by the subcutaneous injection of 1 to 5 mg. of atropin. In one case the patient was 80 years of age and recovered after injection of 1 and 3 mg. of atropin. Another patient died; the ileus in this case was consecutive to an operation on the fourth day of strangulated femoral hernia, and the physician is inclined to believe that a second injection might have saved the patient. [The last number of the same journal, February 19, describes another case in which the ileus must have been due to volvulus, as there had been no preceding constipation and the localization of the pain was in the left iliac region. The dose of 1 mg. had no effect, nor 1.5 mg. a few hours later. The fecal vomiting continued, but injection of 3 mg. the next day was followed in twenty minutes by flatus and copious evacuations. All traces of the slight intoxication from the atropin had passed away in twenty-four hours.—ED.]

Change of Address.

J. D. Alston, 101 Maple St., Nashville, Tenn., to Box 108, Franklin, Tenn.
F. W. Bird, 2632 Locust St., St. Louis, Mo., to Poteau, I. T.
Bowman & Grieve, 1000 East Ann St., to 213 North Thayer St., Ann Arbor, Mich.
E. Burfield, Holyrood, Kan., to Elindale, Kan.
J. H. Campbell, 618 Congress St., to 598 Van Buren St., Chicago, Ill.
D. D. Chapman, 3323 Laclede Ave., St. Louis, Mo., to Spencer, W. Va.
F. G. Cheek, Main St., Winston, N. C., to Chapel Hill, N. C.
V. S. Cheney, 2600 State St., flat 503, to 56 25th St., flat 3, Chicago, Ill.
R. S. Childs, Nashville, Tenn., to Box 79, Marlin, Tex.
Charles E. Codman, Spruce St., to 328 South 42d St., Philadelphia, Pa.
A. Cornelius, 130 West Randolph St., to 489 North Clark St., Chicago, Ill.
A. P. Delcourt, New Orleans, La., to School and Grimage Sts., Houma, La.
A. C. Denson, 263 Union St., Memphis, Tenn., to Fountain Hill, Ark.
L. W. Dukes, Nashville, Tenn., to Ocala, Fla.
H. A. Edwards, Sellers, S. C., to Latta, S. C.
H. C. Foster, 530 Ellis St., Augusta, Ga., to Ochlochonee, Ga.
J. D. Fowler, Nashville, Tenn., to Cornersville, Tenn.
B. F. Fulton, Nashville, Tenn., to Berryville, Miss.
E. J. Gray, Nashville, Tenn., to Tecumseh, O. T.
J. M. Greene, 1014 West Chestnut St., Louisville, Ky., to 740 Orient St., Medina, N. Y.
L. Hall, 1344 25th St., to 2309 Atkins St., Des Moines, Ia.
J. W. Heddens, 301 North 8th St., to 6th and Francis Sts., St. Joseph, Mo.
E. A. Hill, Wolf Summit, W. Va., to Salem, W. Va.
J. A. Hill, Lufkin, Tex., to Groveton, Tex.
W. T. Howard Jr., 88 Dorchester Ave., to Pathological Laboratory, Lakeside Hospital, Cleveland, Ohio.
M. C. Hughey, Memphis, Tenn., to Hiram, Mo.
A. Hymanson, 165 Henry St., to 232 Henry St., New York City.
F. T. Isbell, Memphis, Tenn., to Chapel Hill, Ark.
H. C. Johnson, Manawa, Wis., to Glen Flora, Wis.
De Witt Jordan, 319 North Delaware St., Indianapolis, Ind., to 710 Jackson St., Anderson, Ind.
W. T. Keener, 52 Randolph St., to 90 Wabash Ave., Chicago, Ill.
E. E. Kolor, 381 West 18th St., to 55 Fisk St., Chicago, Ill.
A. Leffingwell, Aurora on Cayuga Lake, N. Y., to Watkins, N. Y.
H. E. Luehrs, 328 South Hoyne Ave., to 623 West Monroe St., Chicago, Ill.
P. B. McCray, Nashville, Tenn., to 1105 Harrison St., Kansas City, Mo.
A. C. McCulley, Nashville, Tenn., to Oakland, Tenn.
E. L. McKinnie, Viola, Ill., to Room 9, Exchange Bank Bldg., Colorado Springs, Colo.
F. A. Moore, Memphis, Tenn., to Mahon, Miss.
V. O. Moore, 710 Starr Ave., to 1103 Starr Ave., Toledo, Ohio.
N. D. Polson, 5429 Washington Ave., to 676 Jackson Blvd., Chicago, Ill.
Ella N. Prescott, 1566 Canal St., New Orleans, La., to Box 33, Greensburg, La.
W. G. Trice, Waco, Tex., to Elk, Tex.
S. N. Quillin, Carp, Ind., to New Hamilton Bldg., Linton, Ind.
J. F. Shambs, 1062 Pearl St., to 255 Walton Ave., Cleveland, Ohio.
S. W. Staley, Charleston, S. C., to Liberty, N. C.
T. W. Stephens, Nashville, Tenn., to Shelbyville, Tenn.
C. C. Tallman, Silver Cross Hospital, to care Illinois Steel Company, Joliet, Ill.
J. E. Torrence, Presbyterian Hospital, Cincinnati, Ohio, to Hamilton, Ohio.
R. B. Touchstone, Memphis, Tenn., to Braxton, Miss.
E. J. Vogelsang, Windermere Place, to 4605 Delmar Ave., St. Louis, Mo.
A. T. Waring, Nashville, Tenn., to Cusseta, Tex.
W. R. Washburn, Hot Springs, Ark., to Sherman, Tex.

Queries and Minor Notes.

RECIPROCITY CONCERNING LICENSE.

FAIRMOUNT, IND., Feb. 18, 1901.

To the Editor:—Can you inform me where I can obtain a copy of Dr. Paul Amberg's article entitled, "Present Status of Interstate Reciprocity Concerning License to Practice Medicine?"

A. H.

ANS.—In the *Medical News*, Nov. 3, 1900, a copy of which can be obtained through Lea Brothers & Co., New York City.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Feb. 21 to 27, 1901, inclusive:

George E. Bushnell, major and surgeon, U. S. A., sick leave of absence extended.

Marshall M. Cloud, lieutenant and asst.-Surgeon, U. S. A., sick leave of absence extended.

Francis G. Engelhardt, acting asst.-surgeon, from San Francisco, Cal., to Syracuse, N. Y., reporting by letter, on arrival, to the Surgeon-General for annulment of contract.

Joseph M. Heller, major and surgeon, Vols., to Fort Myer, Va., for duty with the squadron of the 5th Cavalry now under orders for the Philippines.

Deane C. Howard, captain and asst.-surgeon, U. S. A., leave of absence granted.

George J. Newgarden, captain and asst.-surgeon, U. S. A., sick leave of absence extended.

Joseph C. Reifsnyder, acting asst-surgeon, member of a board at West Point, N. Y., to examine candidates for admission to the U. S. Military Academy, vice Lieut. Franklin M. Kemp, asst.-surgeon, U. S. A., relieved.

Frederick P. Reynolds, major and surgeon, Vols., relieved from further duty in the Division of the Philippines and assigned to duty at the U. S. General Hospital, Washington Barracks, D. C.

Ira A. Shimer, lieutenant and asst.-surgeon, Vols., from the Department of Cuba to duty at Fort McHenry, Md.

Alexander N. Stark, major and surgeon, Vols., from the Department of Cuba to duty at Fort McHenry, Md.

Roy A. Wilson, acting asst.-surgeon, from Fort Totten, N. Y., to Fort Ethan Allen, Vt., to accompany the squadron of the 5th Cavalry to be sent from that post to Fort Grant, Ariz.; thereafter to return to his proper station.

Robert H. Zauner, acting asst.-surgeon, from Fort Du Pont, Del., to Columbus Barracks, Ohio, for temporary duty.

Navy Changes.

Changes in the Medical Corps of the Navy for week ended March 2, 1901:

Surgeon G. Pickrell, detached from the Cavite Naval Station, and ordered to the Mare Island Navy Yard.

Asst.-Surgeon J. C. Thompson, detached from the *Solace*, and ordered home to wait orders.

Surgeon A. R. Wentworth, detached from the *Independence*, and ordered to the *Solace*.

Surgeon F. J. B. Corderio, detached from the *New Orleans*, and ordered home via the *Buffalo*.

Surgeon C. F. Stokes, detached from the *Buffalo*, and ordered to the *New Orleans*.

Medical Inspector F. Rogers, detached from recruiting duty and ordered to the Asiatic Station, as fleet surgeon.

Medical Inspector R. C. Persons, detached from duty as fleet surgeon of the Asiatic Station, and home to wait orders.

Surgeon W. H. Rush, retired, detached from the Pensacola Navy Yard, and ordered home.

Health Reports.

The following cases of smallpox, yellow fever and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended March 2, 1901:

SMALLPOX—UNITED STATES.

Alabama: Mobile, Feb. 16-23, 1 death.
California: Los Angeles, Feb. 9-16, 1 case.
District of Columbia: Washington, Feb. 2-23, 12 cases.
Florida: Jacksonville, Feb. 16-23, 3 cases.
Illinois: Chicago, Feb. 16-23, 10 cases.
Indiana: Delaware County, Feb. 2, 1 case.
Kansas: Lawrence, Feb. 8-16, 1 case; Wichita, Feb. 16-23, 8 cases.
Kentucky: Lexington, Feb. 8-23, 3 cases.
Louisiana: New Orleans, Feb. 16-23, 14 cases, 3 deaths; Shreveport, Feb. 16-23, 2 cases.
Maryland Baltimore, Feb. 16-23, 1 case.
Michigan: West Bay City, Feb. 8-23, 2 cases.
Minnesota: Minneapolis, Feb. 8-23, 15 cases; Winona, Feb. 16-23, 13 cases.
Missouri: St. Joseph, Jan. 1-31, 34 cases, 1 death.
Nebraska: Omaha, Feb. 8-23, 12 cases.
New Hampshire: Manchester, Feb. 16-23, 30 cases.
New Jersey: Newark, Feb. 8-26, 3 cases.
New York: New York City, Feb. 16-23, 43 cases, 9 deaths.
Ohio: Ashtabula, Feb. 16-23, 3 cases; Cincinnati, Feb. 15-22, 3 cases; Cleveland, Feb. 16-23, 48 cases.
Pennsylvania: Erie, Feb. 16-23, 1 case; Pittsburg, Feb. 16-23, 3 cases; Steelton, Feb. 16-23, 1 case.
South Carolina: Greenville, Feb. 16-23, 2 cases.
Tennessee: Memphis, Feb. 16-23, 21 cases; Nashville, Feb. 16-23, 6 cases.
Texas: Galveston, to Feb. 16, 123 cases.
Utah: Salt Lake City, Feb. 8-23, 46 cases, 1 death.
West Virginia: Huntington, Feb. 16-23, 1 case.

SMALLPOX—FOREIGN AND INSULAR.

Austria: Prague, Jan. 26-Feb. 9, 17 cases.
Belgium: Antwerp, Jan. 26-Feb. 2, 1 case; Ghent, Jan. 19-26, 1 death.
Brazil: Bahia, Jan. 19-26, 3 cases; Pernambuco, Dec. 17-Jan. 15, 62 deaths; Rio de Janeiro, Dec. 16-Jan. 15, 39 deaths.
Ceylon: Colombo, Jan. 6-12, 1 case, 1 death.
Ecuador: Guayaquil, Jan. 8-26, 11 deaths.
France: Paris, Jan. 16-Feb. 9, 32 deaths.
England: Bradford, Feb. 2-9, 2 cases; Liverpool, Feb. 2-9, 1 case; London, Jan. 26-Feb. 9, 4 cases; Newcastle on Tyne, Jan. 26-Feb. 2, 7 cases, 1 death.
India: Bombay, Jan. 15-27, 9 deaths; Calcutta, Jan. 12-26, 186 deaths; Karachi, Jan. 13-27, 22 cases, 14 deaths; Madras, Jan. 15, 6 deaths.
Mexico: City of Mexico, Feb. 1-16, 4 deaths.
Netherlands: Rotterdam, Feb. 8-16, 1 case.
Porto Rico: Ponce, Feb. 1-10, 32 cases.
Russia: Moscow, Jan 19-Feb. 2, 17 cases, 2 deaths; Odessa, Jan. 26-Feb. 9, 35 cases, 13 deaths; St. Petersburg, Jan. 26-Feb. 2, 1 case; Warsaw, Jan. 19-26, 12 deaths.
Scotland: Dundee, Jan. 26-Feb. 9, 17 cases; Glasgow, Feb. 8-15, 10 deaths.
Straits Settlements: Singapore, Dec. 29-Jan. 12, 1 death.

YELLOW FEVER.

Brazil: Rio de Janeiro, Dec. 8-Jan. 15, 10 deaths.
Cuba: Havana, Feb. 8-16, 2 cases, 2 deaths.
Mexico: Vera Cruz, Feb. 8-15, 1 death.

PLAGUE.

Africa: Cape Town, Feb. 8, 2 cases.
India: Bombay, Jan. 16-29, 837 deaths; Calcutta, Jan. 12-26, 89 deaths; Madras, Jan. 19-26, 1 death.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

61 Market Street : : Chicago, Ill.

Cable Address: "Medic, Chicago"

Subscription price: Five dollars per annum in advance

Postage in the United States and Canada, Mexico, Hawaii, Guam, Porto Rico, and the Philippines, free; foreign postage, $2.50. Subscriptions may commence at any time. Volumes begin with the first issue of January and of July.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

The qualifications for membership require that the applicant be a member, in good standing, of a state or local medical society entitled to send delegates to the annual meeting of the AMERICAN MEDICAL ASSOCIATION. A list of these societies will be sent on request. Applications must be accompanied with a certificate showing that the applicant is a member of a recognized society, and should be sent with the annual dues—five dollars—to the treasurer, Dr. Henry P. Newman, 100 Washington Street, Chicago. Members receive THE JOURNAL free. Subscribers to THE JOURNAL may become members of the ASSOCIATION without additional expense if they are members of medical societies recognized by the ASSOCIATION. Those desiring to have their names transferred from the subscription to the membership lists should send certificates as above, with a receipt for their subscription to THE JOURNAL, covering the current fiscal year.

FISCAL YEAR.

The fiscal year of the AMERICAN MEDICAL ASSOCIATION is from January 1 to December 31; and the annual dues paid by a new member cover only the fiscal year, no matter at what time of year the membership is obtained. Those who pay their dues and join the ASSOCIATION at the annual meeting in June, for instance, pay only for the fiscal year which ends with the December following, and the annual dues for the following fiscal year are payable the succeeding January, at which time the treasurer sends a statement to each member. Such members, however, are entitled to THE JOURNAL for the full year, even though the membership be not continued.

PAPERS READ AT THE ANNUAL MEETING.

"Every paper received by this ASSOCIATION and ordered to be published, and all plates or other means of illustration, shall be considered the exclusive property of the ASSOCIATION. . . The Board of Trustees shall have full discretionary power to omit from the published transactions, in part or in whole, any paper that may be referred to it by the ASSOCIATION or either of the Sections, unless specially instructed to the contrary by vote of the ASSOCIATION." (From Article V of the By-laws.)

NEWS.

Our readers are requested to send us items of news of a medical nature, also marked copies of local newspapers containing matters of interest to members of the medical profession. We shall be glad to know the name of the sender in every instance.

ORIGINAL PAPERS.

Articles are accepted for publication with the understanding that they are contributed solely to this journal.

COPYRIGHT.

Matter appearing in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION is covered by copyright, but as a general thing, no objection will be made to the reproduction of anything appearing in its columns if proper credit be given.

CONTRIBUTIONS TYPEWRITTEN.

It will be satisfactory to all concerned if authors will have their contributions typewritten before submitting them for publication. The expense is small to the author—the satisfaction is great to the editor and printer. We can not promise to return unused manuscript.

Half-tones, zinc etchings and other illustrations will be furnished by THE JOURNAL when photographs or drawings are supplied by the author.

ADVERTISEMENTS.

Advertising forms go to press eight days in advance of the date of issue. Therefore, in sending in copy, time should be allowed for setting up advertisements and for the sending and return of proofs. Advertising rates will be made known on request.

CHANGE OF ADDRESS.

In ordering a change of address it is important that both the old and new addresses be given.

REMITTANCES.

Remittances should be made by check, draft, registered letter, money or express order. Currency should not be sent, unless registered. Stamps in amounts under one dollar are acceptable. Make all checks, etc., payable to "JOURNAL AMERICAN MEDICAL ASSOCIATION," except those for annual dues. These should be made payable and sent direct to the Treasurer, Dr. Henry P. Newman, 100 Washington Street, Chicago.